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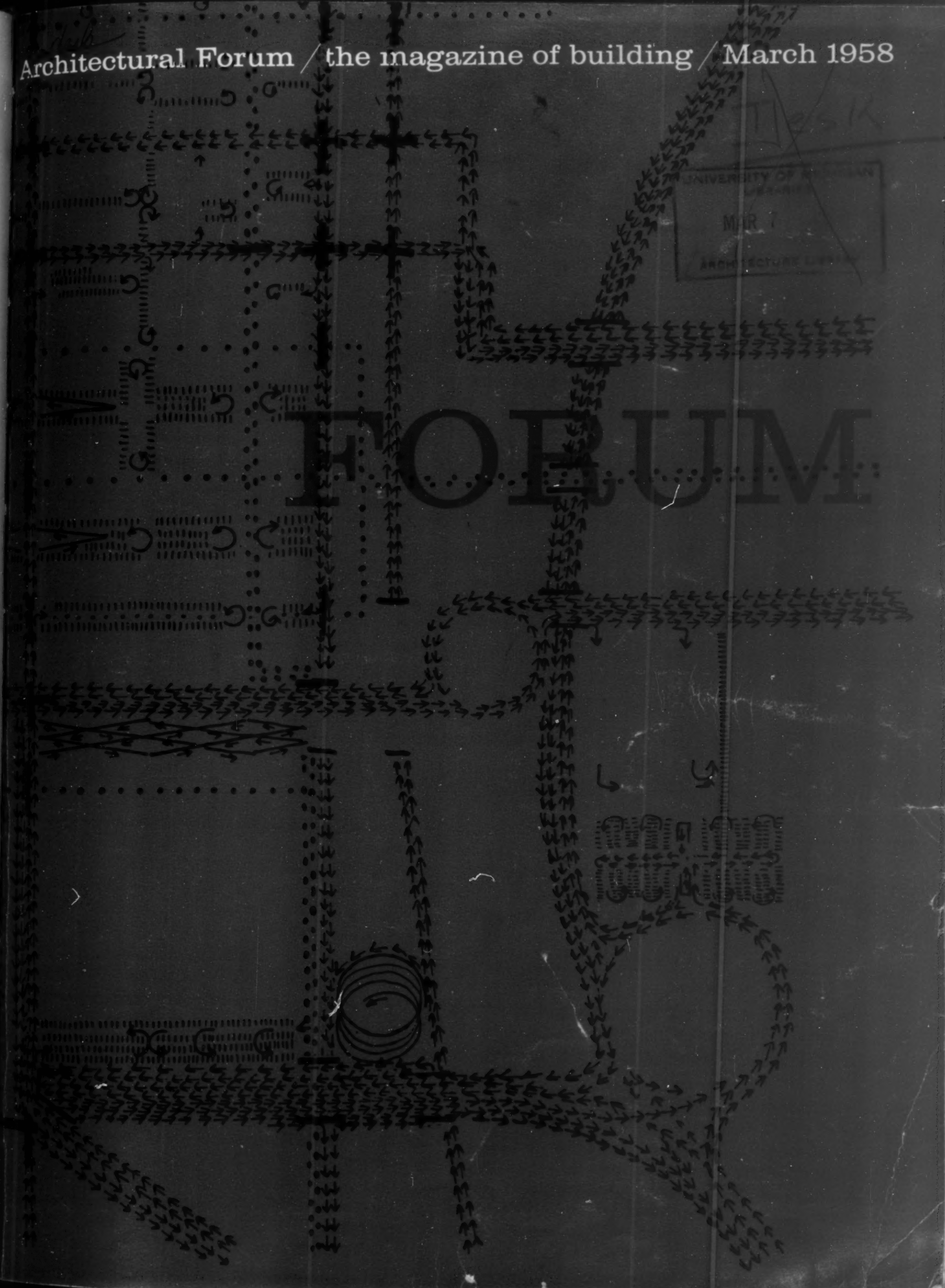

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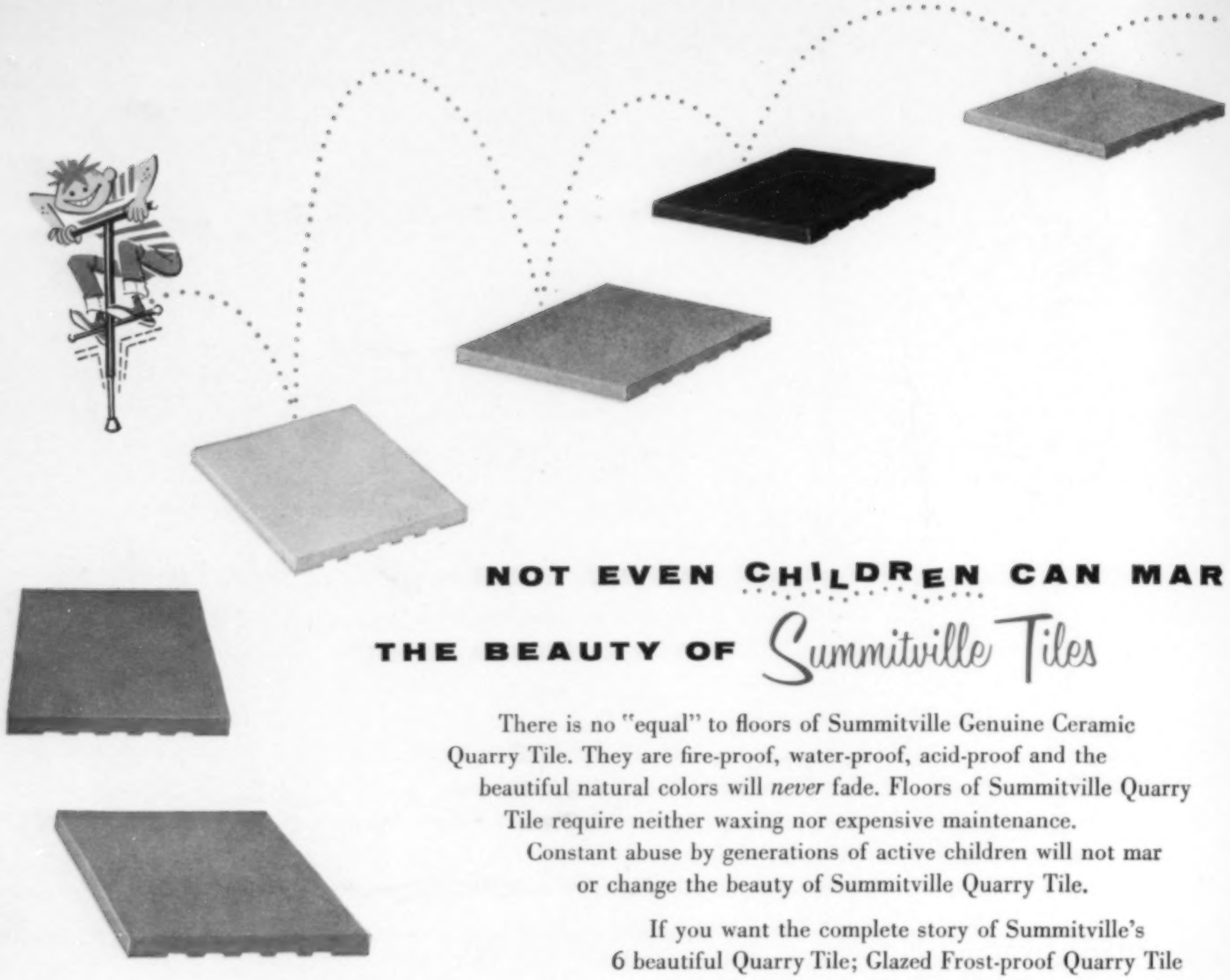

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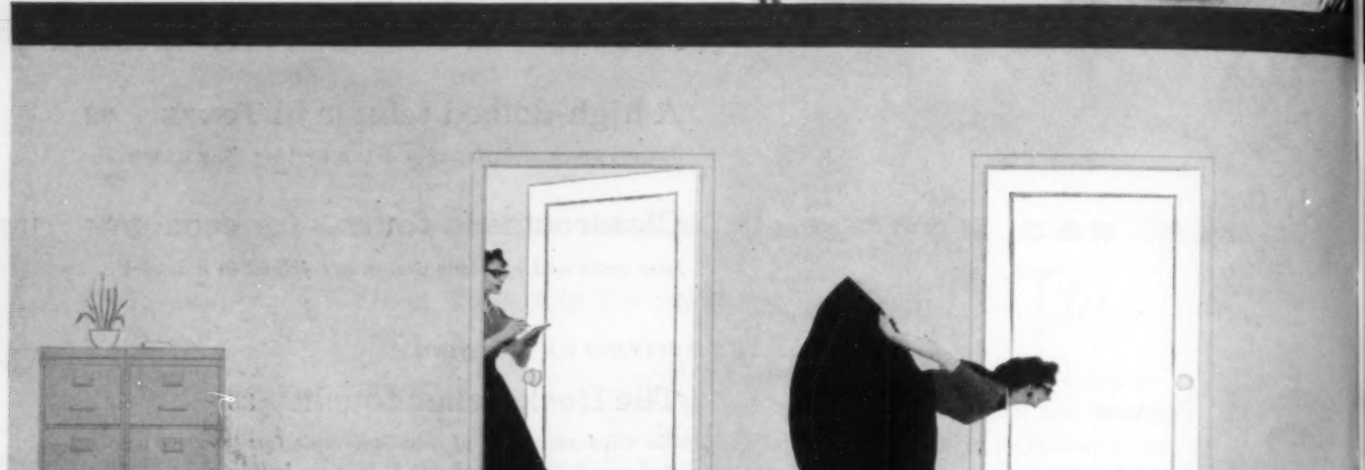

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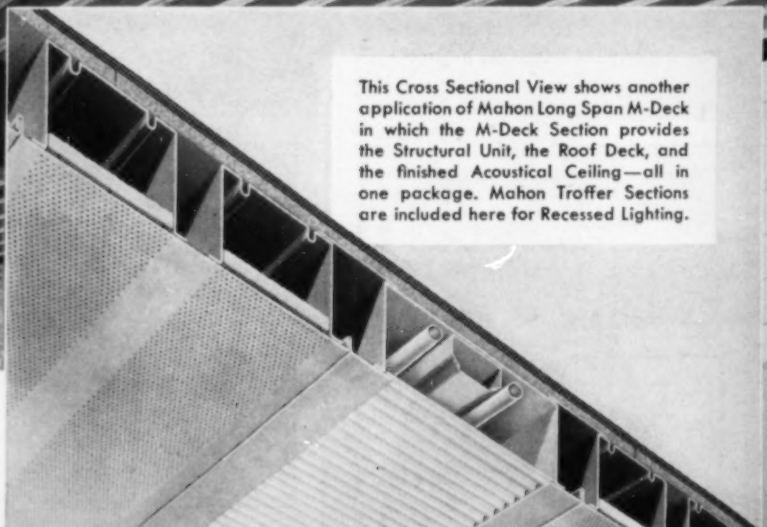

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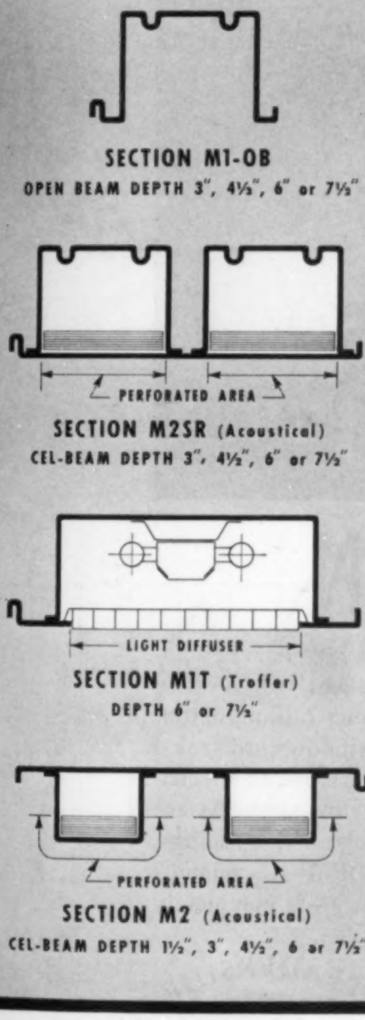
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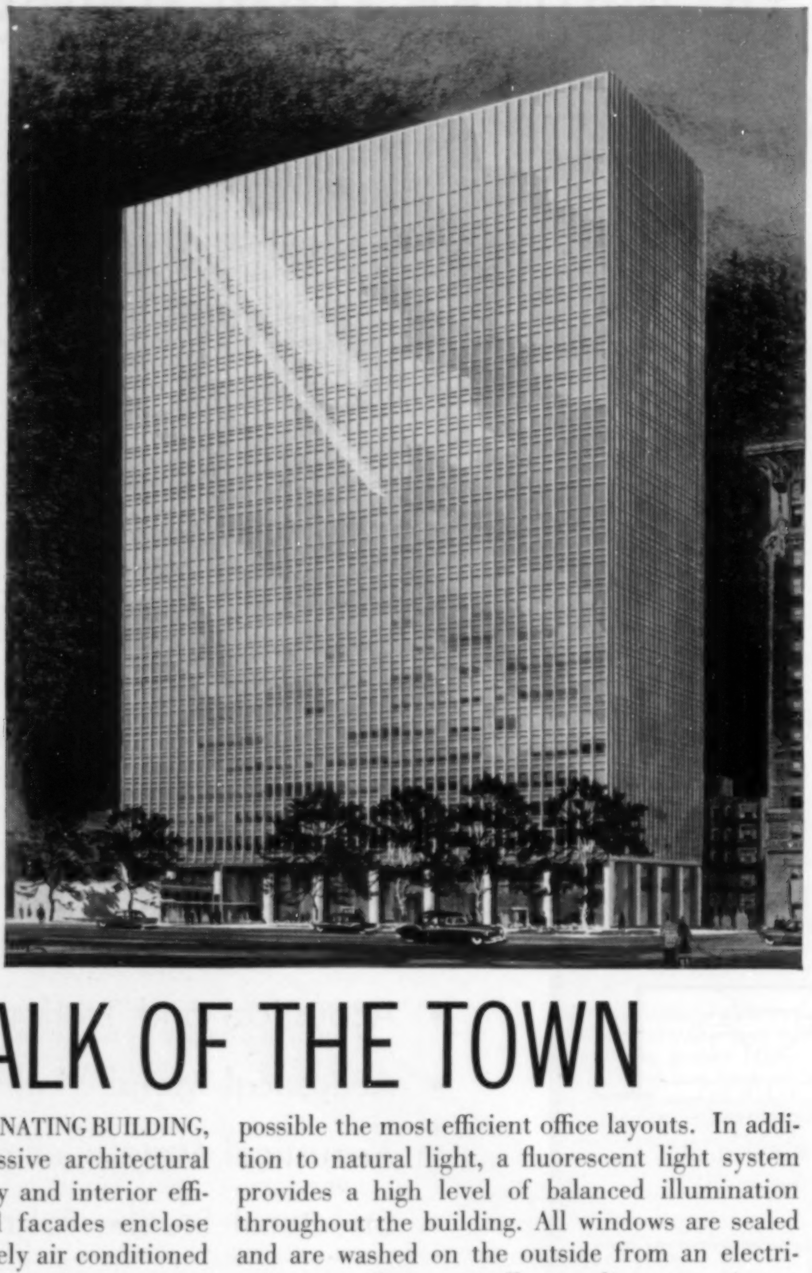

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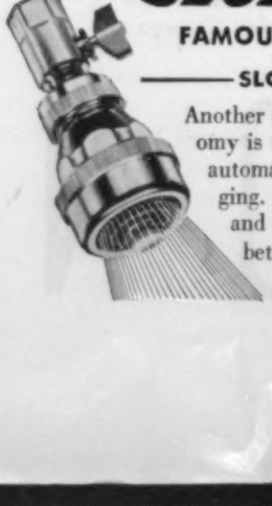

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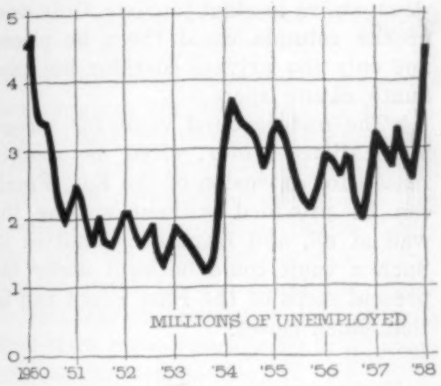
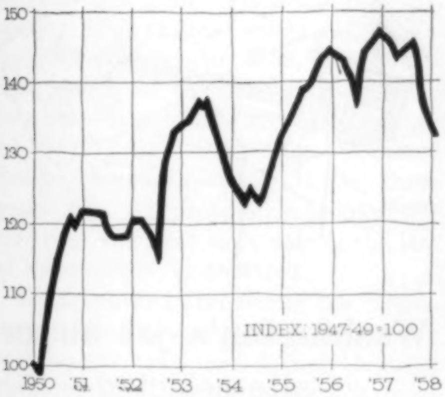
Administration proposals for fighting recession will not stimulate much construction

MEASURES OF A RECESSION



UNEMPLOYED*



INDUSTRIAL PRODUCTION*

Sources: Unemployment, U.S. Department of Commerce, Bureau of the Census. Industrial Production, Federal Reserve Board.

Last month, both Congress and the Administration left off worrying about outer space long enough to concern themselves with some problems on the domestic scene almost as worrisome as any to be found among the stars. Despite, or perhaps because of, the success of the Army's Explorer satellite, scientists and generals who had held center stage just a few weeks before found the spotlight suddenly swung away from them. The new focus of the nation's attention was the fast rise in unemployment and the drop in industrial production (charts, left). The preoccupation with super-missiles was temporarily displaced by concern for an economy that suddenly looked a little anemic—mostly because it had enjoyed such robust health for so long.

By mid-February it was apparent that the recession was as much a political issue as an economic one. Congressmen on both sides of the aisle were making "recovery" speeches that sounded like the opening shots in the 1958 congressional election campaign. But President Eisenhower came up with his own program to battle the recession before the Senate Democrats could fire their heaviest salvos.

The key feature of the President's program was his proposal to launch a $2 billion program of modernization for the Post Office Department. Postmaster Summerfield presented the program to Congress, proposing rehabilitation of 2,500 federally owned buildings, and replacement or remodeling of 12,000 leased buildings.

But there are a lot of "ifs" in the post office program and it does not look as though it will stimulate much building, at least right away. For one thing, the proposal calls for outlays of $175 million a year for three to five years for modernization and rehabilitation of post offices. But this money is contingent on Congress' voting a 5-cent rate on out-of-town first-class mail. If Congress is unwilling to vote the increase, then the modernization program will be killed.

Ike also asked for removal of interest limits on GI mortgage loans, and on FHA-insured mortgages on rental projects, cooperatives and military housing under the Capehart Act. But interest rates are trending downward anyway (page 35) now, and the decontrol of FHA rates, consequently is not likely to have much direct effect on building volume.

The President also declared that spending on the national highway system will be stepped up from $1.8 billion in fiscal 1958 to $2.4 billion in fiscal 1959. But this is less than the increase that was outlined in his Budget message last January. The promised "increase in activity under the urban renewal program" is only what had been programmed.

The President said that civilian public works spending "will increase sharply in the current fiscal year and be still higher in the coming fiscal year." While it is true that such spending will be higher in fiscal 1959, two big public works programs—aid to hospital construction and aid to school building in areas where federal installations swell school enrollments—are scheduled to be cut back drastically after next year.

In short, the Administration's present plans for combating the business downtrend do not add up to a "crash" program.

But if the President's proposals were modest, those submitted by Senate Democrats were less so. Most of the Senators asked tax cuts (the President said tax cuts should be a last ditch reserve weapon against the slump "if things got to the point where you felt that it was necessary"), and many of the Democrats also urged emergency aid to building. Senator Gore (Tenn.) asked that a new Public Works Administration be set up, with $500 million to be handed to state and local agencies (on a $9 for every $1 spent basis). A similar bill was introduced in the House. Senator Douglas (Ill.) asked for a $4.4 billion tax cut, and increased spending for "schools, hospitals, clearing of slums, and roads."

Senator Sparkman (Ala.) proposed an expanded federal housing program, more federal urban renewal aid and an enlarged relocation housing program that, in effect, could become a huge middle-income rental housing program. Under his scheme, any families dis-

continued on page 8

placed by government actions that could not afford housing under the FHA-insured home mortgage standards would become eligible for Section 221 rental housing.

Of all the various proposals pouring out of Washington for using construction to cure the recession, only Senator Gore's public works program would have much immediate effect, and it is the least likely of any to get passed.

But with the federal budget still dominated by defense spending and perilously close to imbalance, and with inflationary pressures still strong despite the recession, the Administration has apparently decided that it had best go slow in fighting the recession.

WASHINGTON

Capitol East Front extension is authorized; secrecy, distortions hit at Senate hearing

By a secret vote, in a secret meeting dealing with secret plans, the Congressional Commission for the Extension of the Capitol late in February authorized construction of the highly debated new East Front 32½ feet forward from the existing Capitol facade in a new position nearly in line with the projecting wings. Architect of the Capitol J. George Stewart said work could begin "in a few months" and completion could be hoped for in time for the 1961 presidential inaugural. ("For the first time in history," said Washington Architect Julian Berla, "the president would have to stand out front almost on the street.")

House Minority Leader Joseph Martin (R, Mass.) divulged that the Commission's vote was split and that he had voted against the authorization; but he refused to tell how other members voted. House Speaker Sam Rayburn (D, Tex.) was known to have pushed the project, and so had Architect of the Capitol J. George Stewart who, although he was neither a Member of Congress nor a legally qualified architect, was in position as a Commission member to vote for his own proposals.

Stewart and the Commission itself had been under heavy attack earlier in the week at hearings by a subcommittee of the Senate Public Works Committee under Senator Pat McNamara (D, Mich.). Ostensibly these hearings were called to consider a brace of three bills, bi-partisan and parallel, introduced by Senator H. Alexander Smith (R, N.J.) and others to amend the 1955 legislation—which made the East Front extension mandatory—so that alternate plans could be considered; but the Commission acted before the bills could be reported out.

Apart from irregularities of Commission procedure, secrecy was charged by Architect Lorimer Rich, because the plans, although they had long been in preparation, had never been shown to the press, the public, or to any qualified group of professionals other than those hired by Stewart. Such a group of independents had been refused a look at the drawings prior to testifying at the hearing, except on condition that the men promise to deny having seen the plans and to use none of the information. (The hearings made it clear that security features were in areas other than the chief floors and that these features did not require moving the East Wall.)

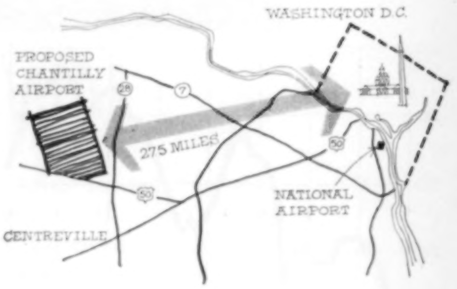
The integrity and reliability of Stewart himself as a public servant came under heavy scrutiny after he said that the East Front should be extended because it was deteriorating dangerously, with chunks falling from the walls endangering the lives of passersby. Pointing out that Stewart had been charged with maintaining the great monument during the past four years, FORUM editor Douglas Haskell replied that this "wire and putty" standard bespoke the gross negligence and "major culpability" of the Architect of the Capitol, who should "rope off the wall for repairs this very afternoon" if it was indeed as represented. Rich then asked: "Could it be that this condition was deliberate in order to build up a case for reconstruction?"

Moreover, the notion that the "cheapest way to repair such a wall is to build a replica on a complete new foundation and then point up the original as well" was challenged by witnesses as untenable.

All in all it was a tough day for the Architect of the Capitol, for opponents of the extension far outnumbered proponents, who included only Stewart himself, Harbeson, and two associates. Opposition was put in evidence from a whole set of professional and historic associations and scores of newspapers.

Aside from the arguments of historic and aesthetic groups, the practicality and economy of the East Front extension were seriously challenged by witnesses:

- The Congress could gain more and proportionately cheaper space by extending the three floors overlooking the West Front Terrace than by getting a "thin sliver of space in the big stone sandwich" proposed along the East Front.
- Extension of the East Front would not provide the direct private corridor at main floor level that Congress so badly wants between the House and Senate chambers without crossing the rotunda. This would mean Congressmen would have to continue ducking up and down stairs to skirt tourists. Only west of the rotunda could there be placed not only the private corridor but adequate eating space.
- The underground vault for a communications center, cited as another reason for extension of the East Front, can be provided without moving the wall at all, and Harbeson admitted it. Such a vault could be built under the present steps of the East Front and be that much closer.



Washington's jet airport site selected

After more than six years of wrangling, Washington, D.C. finally has picked a site for a jet-age airport. Following the recommendations of five different consultants and of the President's assistant for aviation, retired General Elwood R. Quesada, the Civil Aeronautics Administration last month began arranging to take over an 8,000 acre site at Chantilly, Va., about 27½ miles west of downtown Washington.

The new airport will be one of the biggest in the world when finished, and will take up about 5,000 acres of the 8,000 acres now being purchased. The other 3,000 acres may be used as a recreational area by local Virginia communities—the land cannot be used for much except park purposes, as it will form a buffer zone between the airport and nearby residential areas.

Total cost will be around $50 million, some $13 million of which will go for runways and operating facilities other than the terminal itself. Congress has already appropriated $12.5 million. CAA has asked for bids from over 90 architectural and engineering firms, and hopes to have Chantilly in operation by early 1961.

One of the biggest problems will be to provide adequate highway facilities between Chantilly and Washington. To meet expected needs, Virginia and the federal government are cooperating on a road survey, probably will go ahead with a projected widening of U.S. Route 50. Today the drive from Washington to the airport site takes 40 to 50 minutes depending on traffic.

PUBLIC BUILDING

Eisenhower proposals create new interest in federal lease-purchase program

When President Eisenhower presented his program for dealing with the recession last month, one of its principal features was a proposed acceleration of the lease-purchase program of the General Services Administration. Under this program, GSA seeks private financing to build federal buildings which become federal property only after a long-term lease—usually 10 to 30 years—is terminated.

The President said that 58 lease-purchase projects requiring $105 million of private financing would be started this year, while another 34, costing $300 million, would get underway during calendar 1959. The President also asked Congress to extend the program—it died officially last summer when a House Committee thwarted Senate efforts to extend it for three years. The 92 projects scheduled for this year and next were among the last of those already authorized.

Congress, and specifically the House, may treat lease-purchase more kindly this session than last, largely because the program is attracting much more interest from investors and builders than it did last year. There are two reasons for this: 1) The Bureau of the Budget late last year lifted the 4 per cent interest rate limit that had proved a major obstacle to getting private money; 2) handling of construction cost estimates was made more flexible than it had been previously.

The results so far have been encouraging. Late in January, the bidding was brisk for six projects totaling $16.2 million. Low bids were 4.67 per cent and 4.84 per cent, well above the 4 per cent ceiling that prevailed most of last year. Not only were lenders bidding to finance the projects, but builders were competing actively on construction contracts, which are negotiated separately from the financing. On the Albuquerque, New Mexico federal office building, there were 11 bids ranging from 23 per cent to 31 per cent below GSA's "estimated" building cost.

Another encouraging sign for continuation of lease-purchase is the interest shown in the program by investors who previously had ignored it. John Hancock Mutual Life Insurance Co., fifth largest in the U.S. in terms of assets, for the first time got into the lease-purchase picture by submitting successful bids for financing post offices in Burlington, Vt. and Durham, N.H. Unsuccessful bidders for the Durham building were the Trustees of Tufts College, the first time that a university endowment fund had ever bid for a lease-purchase job.

Meanwhile, in Omaha, Neb., a scheme to finance federal lease-purchase buildings by using revenues from the sale of municipal bonds was tied up in litigation. Early in December, a $9 million Omaha post office and federal building had been put up for bids but no bids were received—the 4 per cent limit was still strangling the program. Later, voters approved a plan to submit a bid in the city's name, with financing to come from sale of municipal bonds, interest on which would be exempt from federal taxes. When the building was put up for bid again in mid-January, five bids were received, the lowest being that of the City of Omaha, for 3.78 per cent. But a court test of the legality of the city's move held up its bid, so GSA was forced to accept the next low bid. This does not necessarily mean that the idea of financing federal lease-purchase buildings with municipal revenue bonds is dead. State legislatures in Minnesota, Oklahoma, and Iowa have already passed legislation allowing cities to use such a device for financing GSA buildings, and other states are considering similar legislation.

Indicative, perhaps, of the renewed vigor of the program was GSA's announcement last month that the largest federal office building outside of the Washington, D.C. area would be built in New York City. GSA picked a site in downtown Manhattan for a $65.1 million building, which will provide 1,754,000 sq. ft. of gross floor area for the Customs Court and 11 other federal agencies.

SCHOOL BUILDING

Three-walled classroom beats protest

When is an aisle not an aisle? When it is a corridor.

This was the simple architectural proposition propounded by Cincinnati's Woodie Garber & Assoc. in designing a junior-senior high school for the unincorporated school district of Finneytown, Ohio. Garber gave his classrooms an airy, informal look by simply doing away with the fourth wall, making it a combined aisle-corridor (picture above). The first unit of 20 such classrooms will be built now, three others as need arises.

But the open fourth wall was one feature that almost killed Garber's plan. Despite the fact that his plans had been approved by an inspector of the Division of Factory and Building Inspection of the Ohio Department of Industrial Relations, the chief of that division, 62-year-old Robert A. Skipton, ruled against Garber's design. This caused some consternation

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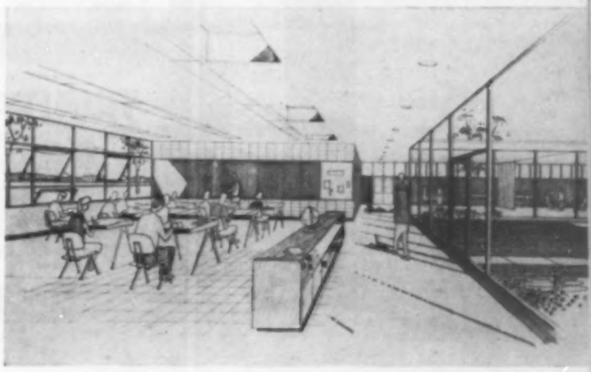

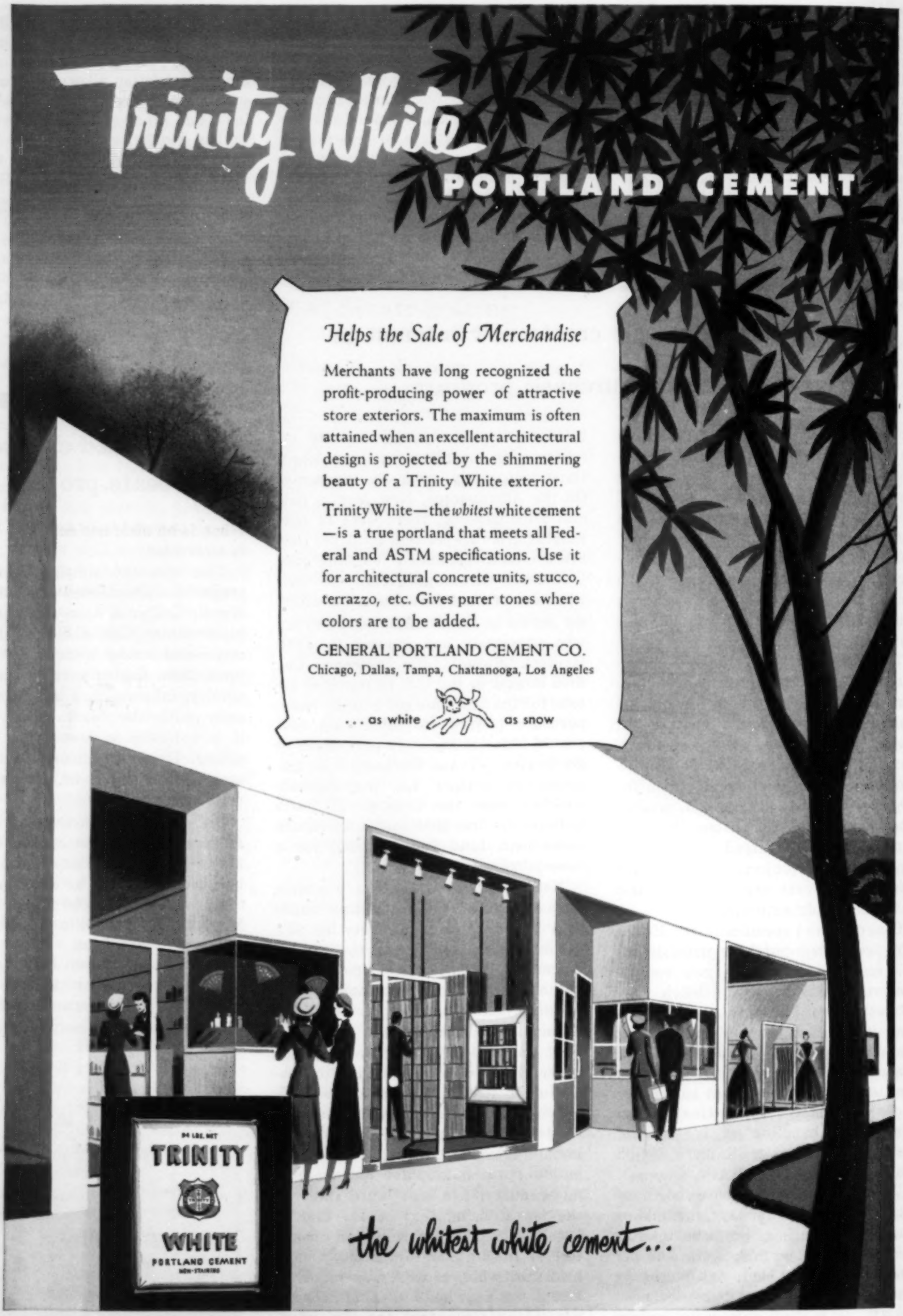
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in the architect's office because the plan had been okayed once, and Skipton himself had given permission to start pouring concrete footings. When asked if his go-ahead on the footings did not indicate tacit approval of the design, even presuming he did not look carefully at the plans when one of his subordinates presented them for approval, Skipton replied that approval of the footings had nothing to do with the design.

Skipton's ruling against the plan hinged on whether or not Garber's open corridors were exits as defined in state fire regulations. The case was fought before a State Board of Building Appeals by the county prosecutor and won by Garber last month. Construction is continuing now, and while Garber's design may have scrambled the definitions of corridor and aisle, it has certainly given Finneytown a school that is a conversation piece.

BUILDING MONEY

New York real estate syndicate goes bankrupt after taking in nearly $5 million from investors

One of the richest sources of real estate capital in the booming postwar period has been the real estate syndicate. Shares in pieces of real property have been sold to thousands of investors, who were usually assured a return much higher than they could get on most securities. The real estate syndicate has been a useful device in the purchase of millions of dollars worth of properties in practically every state in the U.S.

But in New York last month, the syndicate device suffered a fearful blow when a large and well-known syndicate, Nassau Management Co., Inc. was accused by the State Attorney General of "fraudulent practices" that have jeopardized the $4.8 million of investors' funds that have been invested in the company. State Attorney General Louis Lefkowitz leveled the charges late in January, and had Nassau Management put into receivership. It was found that the company had only $7,000 in its general account, had mishandled its bookkeeping and was behind in mortgage and tax payments on some of its properties. Two weeks later, Nassau was enjoined from any dealings in real estate securities in New York state. Attorney General Lefkowitz said that his staff had uncovered more than $250,000 in Nassau assets, mostly in the form of property holdings.

Since its formation in 1953 Nassau Management had formed six investing subsidiaries to buy six properties, including the 400-room Concourse Plaza Hotel in the Bronx and Washington's Roosevelt Hotel. So far, the attorney general's investigations have not shown whether any, some, or all of the money invested in those properties is in danger of loss, but Nassau Management's own shaky financial condition indicates shareholders in the properties might be in for rough going.

Besides its activities as a realty syndicate manager, Nassau Management until recently had a flourishing business relocating families for New York City agencies in connection with urban renewal, roads or other projects. These agencies have hired Nassau for at least $2 million of relocation services, according to Lefkowitz. Most pertinent to the investigations into Nassau itself, however, was the fact that some employees of the New York City Housing Authority were evidently also working for Nassau, or were investors in the company. This has prompted an investigation by City Investigation Commissioner Charles Tenney, and has already resulted in the suspension of a high official in the Board of Estimate's Bureau of Real Estate, another in the Housing Authority itself, and in the resignations of two minor Bureau of Real Estate officials. Lefkowitz says that "close to twenty" Housing Authority employees either worked for or invested in Nassau Management.

Nassau Management was originally started by two former Housing Authority officials, Milton Saslow and Kelsey Volner, who at first dealt in relocation consulting exclusively. The extent of their influence in the Housing Authority—which handles the bulk of relocated families in its public housing projects—is a pivotal element in the investigations of both Lefkowitz and Tenney. The former says that Nassau gave certain employees of the Housing Authority returns of 15 per cent to 17 per cent on money they invested in Nassau, while the general public received only 12 per cent. Since the investigations got underway, the city has canceled 15 relocation contracts it had with Nassau because it said it did not feel Nassau could carry out its obligations.

With the investigations still in full swing, and with the attorney general's office indicating that some indictments may be forthcoming soon, other realty syndicates have begun to fret about the bad publicity. In New York, the Association of Real Estate Syndicators has volunteered to register all its offerings—whether interstate commerce or not—with the Securities & Exchange Commission in an effort to dispel any clouds that may have been cast over the whole realty syndicating business by the Nassau Management investigation. SEC Regional Administrator Paul Windels Jr. indicated to the association that any interstate offerings should have been registered all along—something that most syndicates have heretofore neglected to do.

LABOR

New York truck drivers end 12-day strike

New York City's $400 million a year construction industry was hit by a strike that ran for 12 days last month—and slowed work on over $150 million of projects. The work stoppage resulted from a walkout of sand, gravel, cement, and rubble truck drivers of Local 282 of the International Brotherhood of Teamsters. While there was a contract negotiation involved, the timing of the strike led many labor experts to observe that it looked more like a political than an economic move.

The politics stem from the battle between the Teamsters and the merged AFL-CIO that expelled the Teamsters late last year, and from an internal struggle for the presidency of the New York Teamsters Joint Council. With the truck drivers out, workers of AFL-CIO unions were also forced out of work. But many labor observers viewed the walkout primarily as a power struggle between John O'Rourke, president of the striking local and long-time friend of Teamster President James Hoffa, and a slate of insurgents trying to oust him and his cohorts from the Joint Council. O'Rourke won this fight, and he may have wanted to flex his muscles by calling the walkout.

continued on page 12

Contractors predict a good building year

When 1,300 contractors foregathered in Dallas last month for the 39th annual convention of the Associated General Contractors of America, building news was breaking so fast that many prepared speeches had to be rewritten.

But despite the worsening economic situation, the contractors stuck by their bullish forecast that a total of $68 billion—4 per cent more than last year—will be spent for building in 1958. Of that amount, predicted AGC Executive Director James D. Marshall, $49 billion will go into new construction.

Meanwhile military construction is sure to rise sharply, because of the stepped-up defense program. Major General A. M. Minton, director of Air Force installations, told the contractors that Air Force construction awards would be "about double those of any other year since World War II." Minton went on to say that "A great part of our new construction during this and succeeding years will be for unique structures never before constructed. Our guided missile facilities will present new and interesting problems of design and construction."

Two factors that should make the contractors happier this year are somewhat lower prices for building materials and greater availability of two vital materials—cement and structural steel—both of which have long been in short supply. A Kansas City contractor said, "Material is available and prices are lower than they have been in the last couple of years."

But, while the Association officially stuck by its forecast of increased building in 1958, individual contractors were not so sure about their own outlook. A Dallas contractor estimates that there will be 1,000 failures of contracting firms this year, compared to about 850 last year.

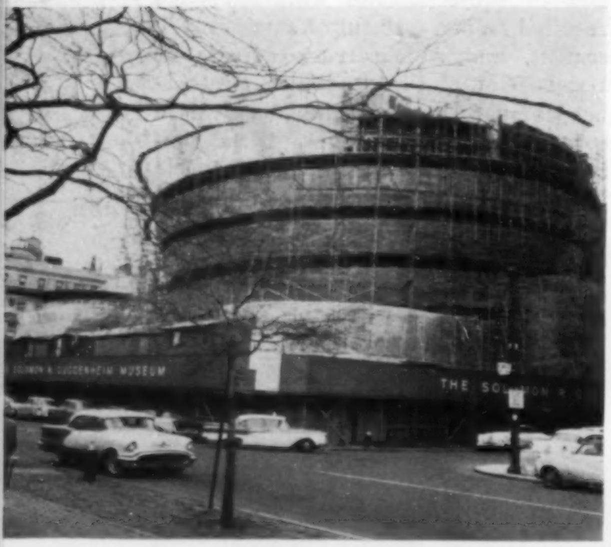
Other contractors deplored the increasing instances of uneconomic bids by some contractors who are desperate for work and want to keep their crews together. One builder told of bidding for an addition to a school he himself had built the year before, and said despite the fact that he based his bid on the same prices as the year previous—thus absorbing price advances—he was outbid by another company. Builder Hal C. Dyer of Dallas said: "Competition is too keen and unstable because too many general contractors are bidding against their competition instead of bidding on the jobs on the basis of a realistic cost plus a profit."

One reason given for the difference in the outlook for the industry generally, and for contractors individually, is that during the building boom of the past few years, too many companies have come into the field. Now that the rate of growth of spending for new construction has slowed down somewhat, these late-comers are finding the going rough.

Two of the biggest pieces of building news discussed at Dallas were the President's post office modernization plan (page 7) and the agreement on featherbedding and other labor practices between the AFL-CIO and the National Constructors Association (page 33). The AGC was cautious in its approach to both developments. The President's post office program was generally regarded as "too little, too late," and AGC members expressed uncertainty that the leasing procedure was really better than the federal government building its own post offices.

Taking office as new president of AGC was Fred W. Heldenfels Jr., Texas highway builder and partner of Heldenfels Bros. of Corpus Christi. James W. Cawdrey of Seattle, Washington, was elected vice president.

WILLIAM H. SHORT



WRIGHT'S NEW YORK MUSEUM

Although Frank Lloyd Wright's "little park with a building in it" will not be finished for another ten months, it is already giving New Yorkers their first close-up look at "organic architecture." The controversial, six-story Solomon R. Guggenheim Museum, with its long, circular ramp, will look west across Central Park, enhancing the building's own garden atmosphere.

Milwaukee debates need for air-raid shelters

At least one American city is doing something about the air-raid shelter proposals in the Gaither and Rockefeller reports (FORUM, Feb. '58). In Milwaukee, plans are being made to include a bomb shelter in a new hospital. The hospital is small (only 54 beds) and will cost only about $5 million, but the experiment is significant nevertheless.

Mayor Frank P. Zeidler is a leading advocate of shelters, and he brought the whole issue to a head when he recently vetoed a common council resolution calling for three new downtown parking pavilions. Zeidler claimed that the city should design the structures so that the bottom two floors would be underground, with complete facilities for human accommodation, and strong enough to support the collapsed weight of the top five floors. Such design would increase the total cost of the parking facilities by only 10 per cent, Zeidler estimates. "I think the time to make a decision as to whether shelters should be included in public structures is long overdue," Zeidler added. But it looks as though the council will try to override Zeidler's veto and push ahead on the $5 million parking pavilions as originally designed.

The shelter proposed for the new West Allis Memorial Hospital would be a 35,000 square foot concrete shelter dug into the side of a hill. It would accommodate 140 to 200 patients and 24 staff members, and cost about $75,000.

While Milwaukee debates shelters on a local level, the National Security Council is still grappling in secret with the federal role in a shelter program, and indeed, whether or not there should be any federal shelter program at all.

Pressure builds up for smaller automobiles

A recurrent solution to the problem of city traffic congestion was back in the news last month. New York's Mayor Robert Wagner asked the five major automobile manufacturing companies to consider building smaller cars. Wagner said downtown congestion and lack of parking space were aggravated by the growing size of Detroit's products. "In the past 10 years," he said, "the average parking lot has lost 15 per cent of its usable space while prewar garages have lost 40 per cent."

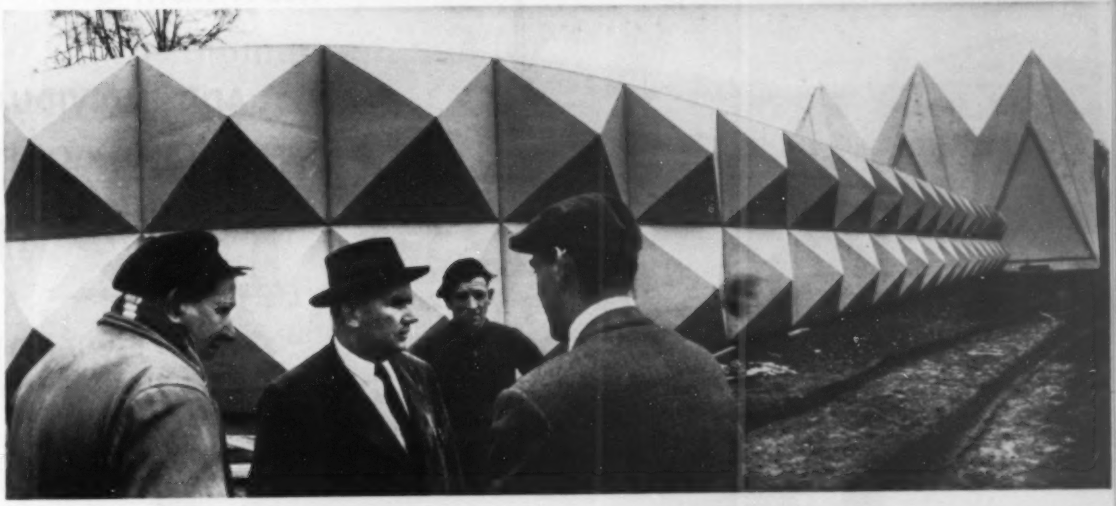
Wagner's proposal was greeted enthusiastically by only one of the auto makers. George Romney, president of American Motors, which makes the 100-inch wheelbase Rambler, found Wagner's request just what the sales manager ordered. He took advantage of the request to place his small cars at Wagner's disposal as official cars. But Wagner turned the offer down, and City Controller Lawrence Gerosa indicated his disdain of the small car by ordering a new Cadillac.

The Big Three—General Motors, Ford and Chrysler—are sticking to their argument that they are only giving the American car buyer what he wants; ever bigger, flashier, and more luxurious cars. But the fast-rising sales of West Germany's little Volkswagen and other imported small cars have finally caused these companies to at least take notice of the growing interest in smaller cars. Both Ford and GM are currently importing their own foreign-made cars.

Meanwhile, Connecticut's Senator Bush, who has spoken on several occasions about the problems, economic and social, posed by big cars, delivered his loudest blast against them last month. He reiterated his belief that they were wasteful of space and raw materials and voiced the fear that U.S. car makers, to protect their markets against growing imports of foreign cars, may soon press for import quotas, thereby imperiling the NATO alliance.

A Senate Judiciary subcommittee investigating auto pricing practices also turned to the question of big vs. small cars when Chrysler President Lester L. Colbert was a witness. But Colbert cited the fact that Chrysler had tried to market a small car from 1953 to 1954, and had seen its share of the U.S. car market drop from 20 per cent to 13 per cent as a result. His conclusion: "It was obvious the public wanted bigger automobiles."

The Senators may soon become even more aware of the big car problem. When their new office building is finished they will have less parking space than they planned. When the building was originally designed in 1948, plans called for 200 parking spaces, each 8 feet wide by 20 feet long. Now, because of the greater length of new cars, there will be only 185 spaces, 10 feet by 22 feet.



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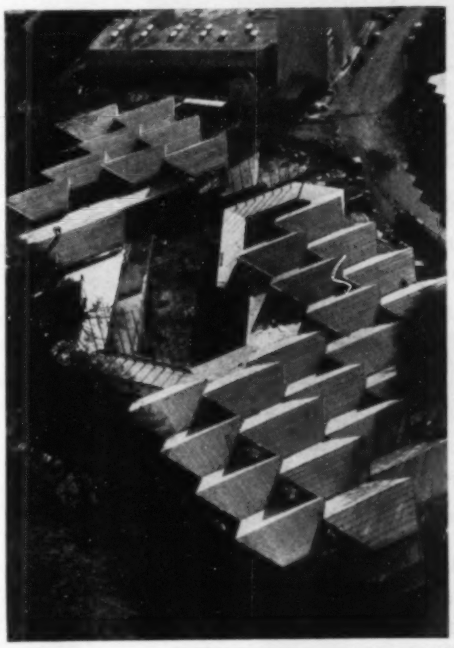

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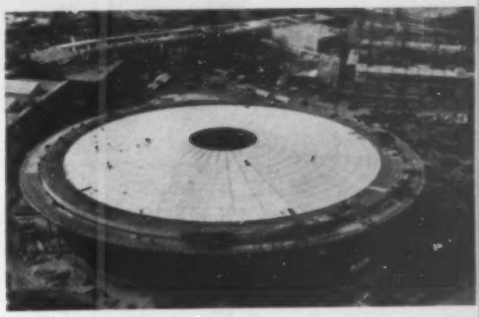

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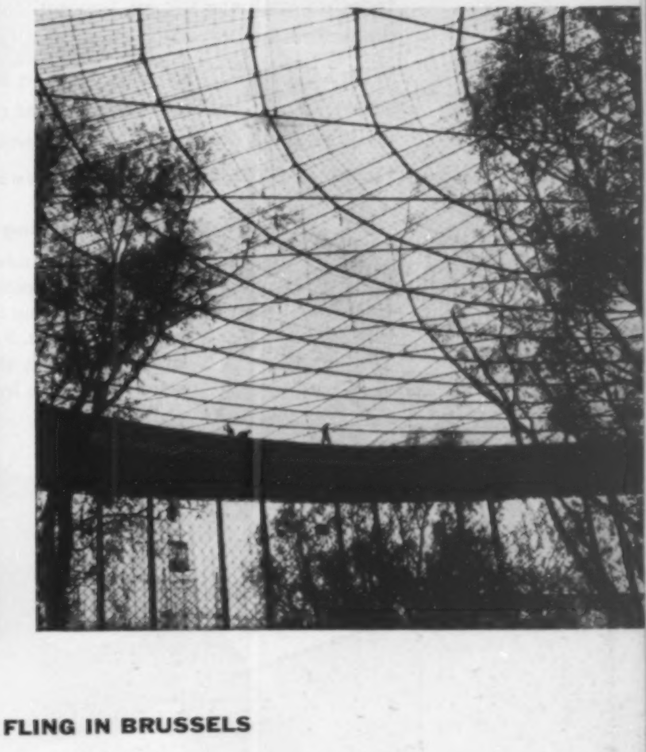

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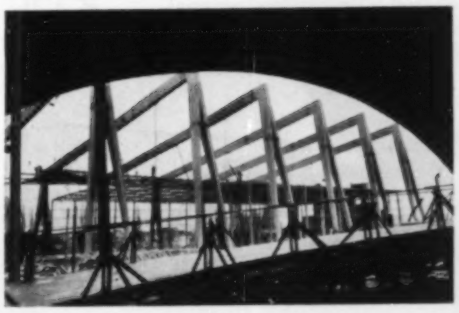

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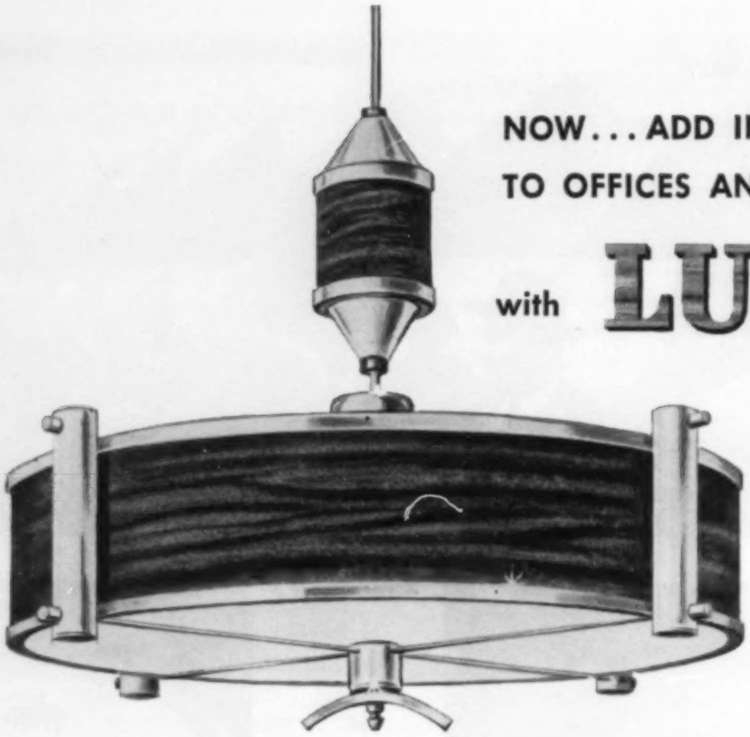
ARCHITECTURE'S FLING IN BRUSSELS

The biggest carnival of architectural gimcrackery and inventiveness that the world has ever seen opens next month at Brussels, Belgium. The photos above were taken by LIFE Photographer Howard Sochurek when the 76 buildings on the 500-acre site were going up. (1) The Spanish pavilion's horizontal metal panels are stacked pugnaciously like a miniature Maginot Line. (2) The Swiss pavilion, nestling in a small valley, is made up of many small chalets, built against the hillside, each with its own peaked roof. The U.S. pavilion, designed by Edward D. Stone, sits like a giant mushroom (3); from inside (4) the roof is an airy spider web spun atop the pavilion's metal filigree walls. (5) The giant stilts of the European Coal-Steel Community Building stand like a procession of sawhorses, patiently waiting for a lightweight, flat roof to be hung from their undersides.



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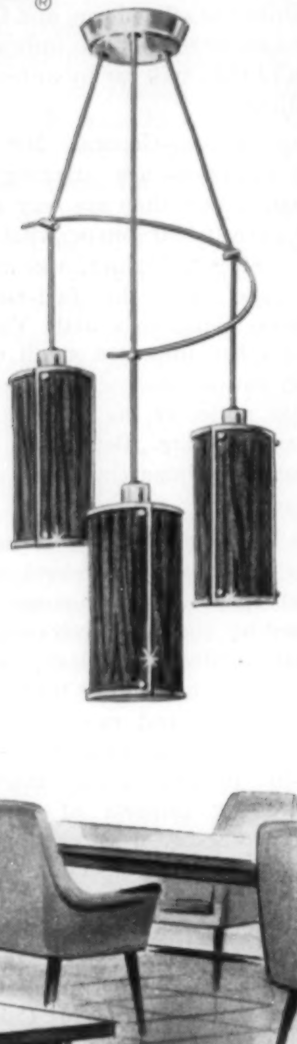

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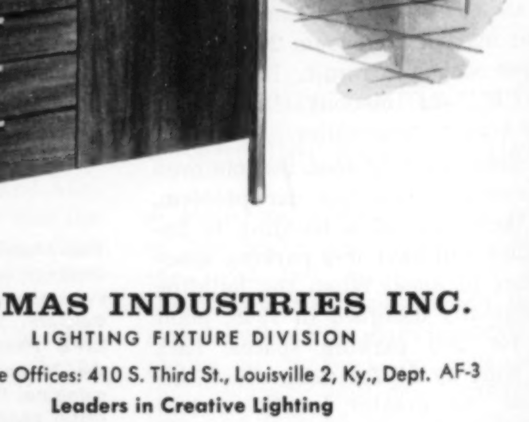

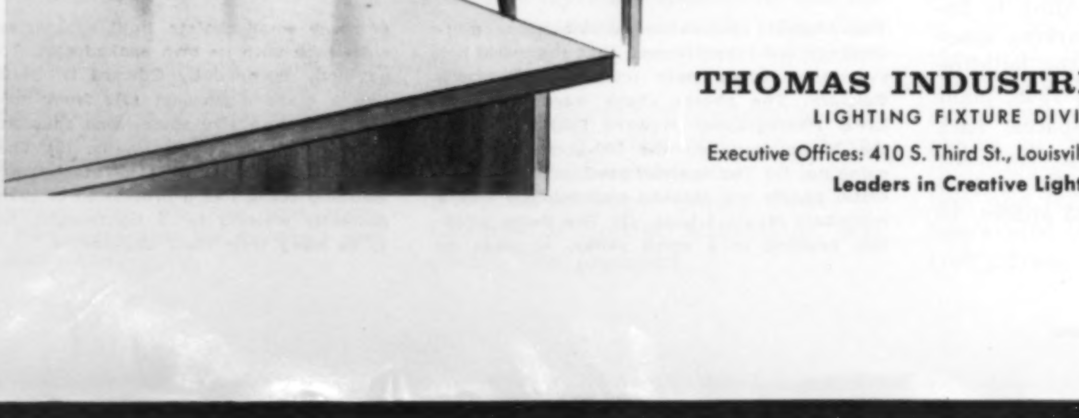

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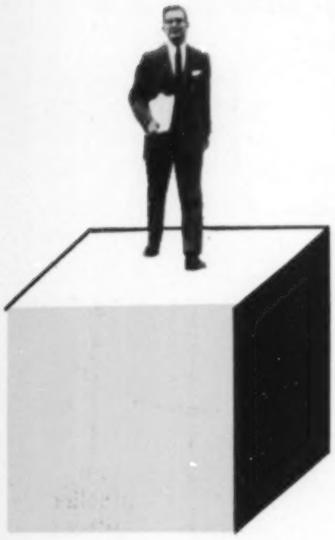

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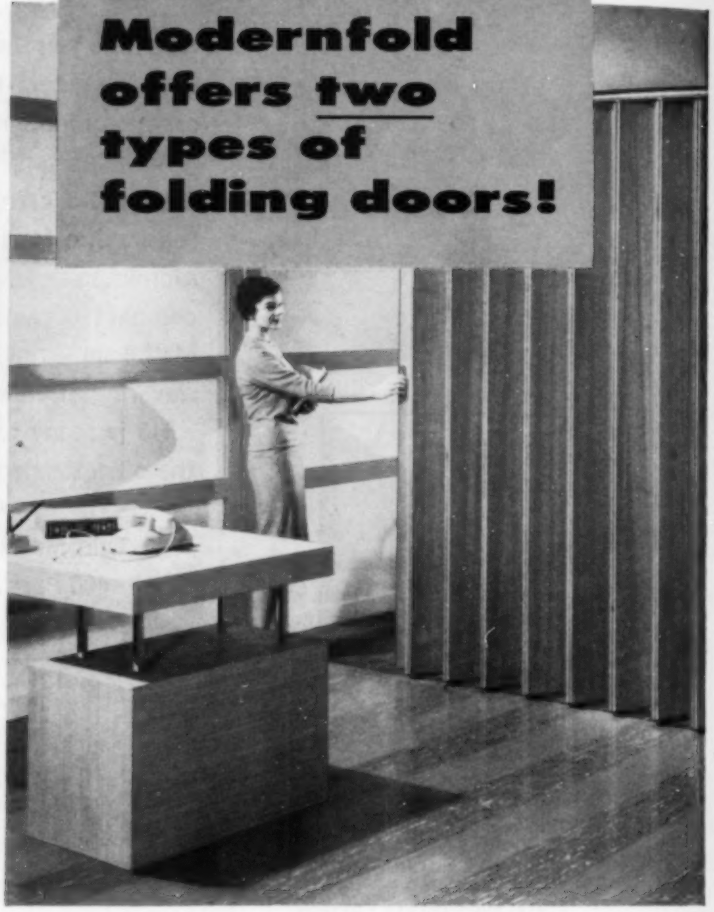

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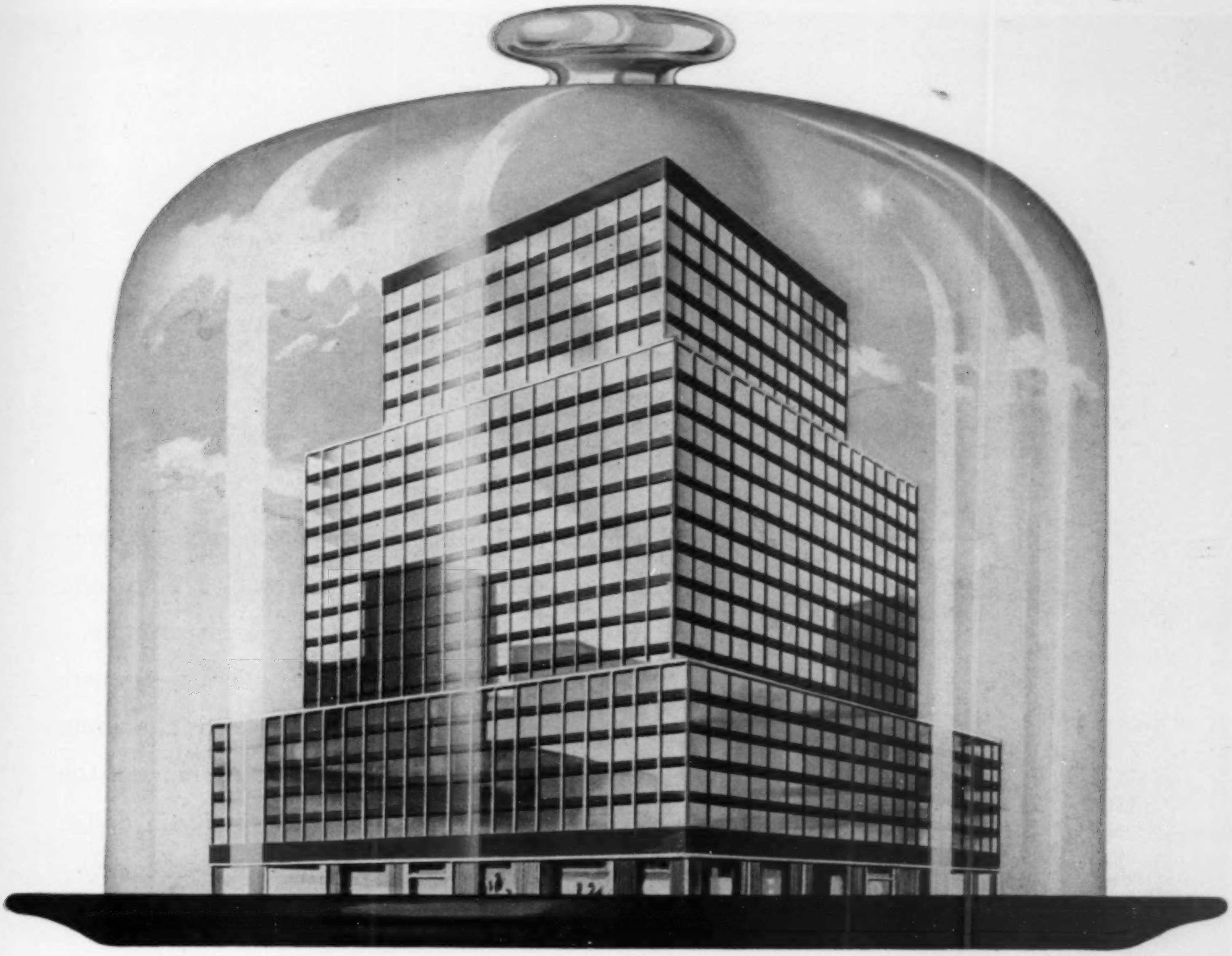
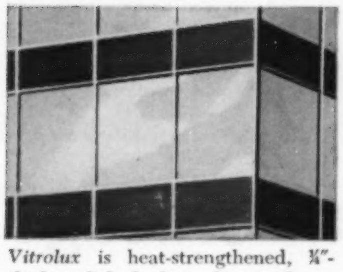


Time can't tarnish buildings "under glass"



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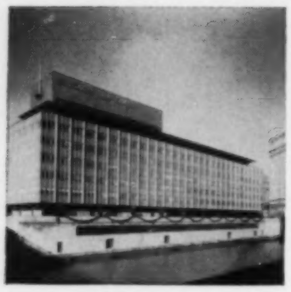

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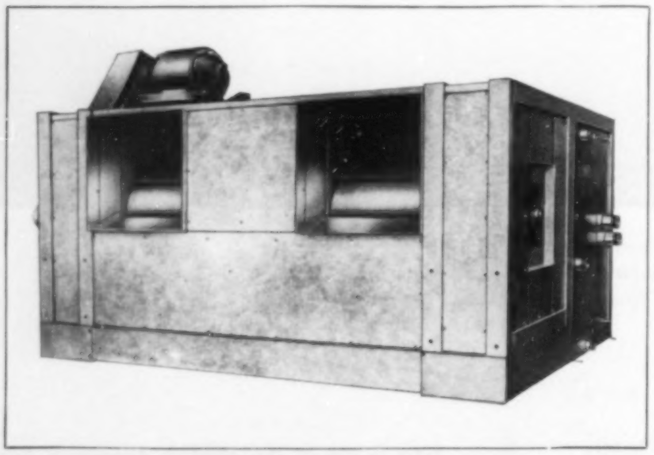

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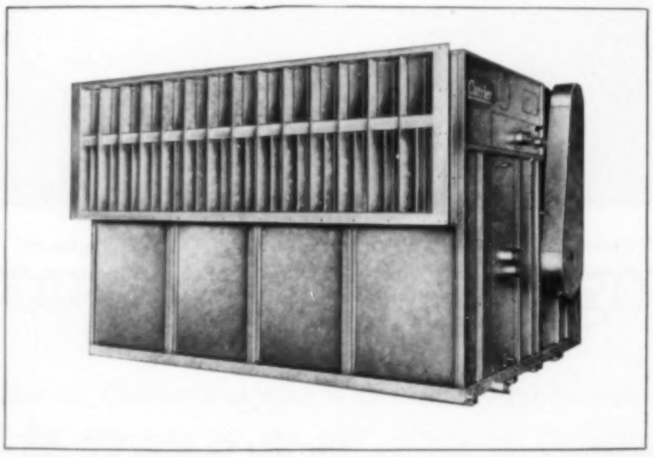

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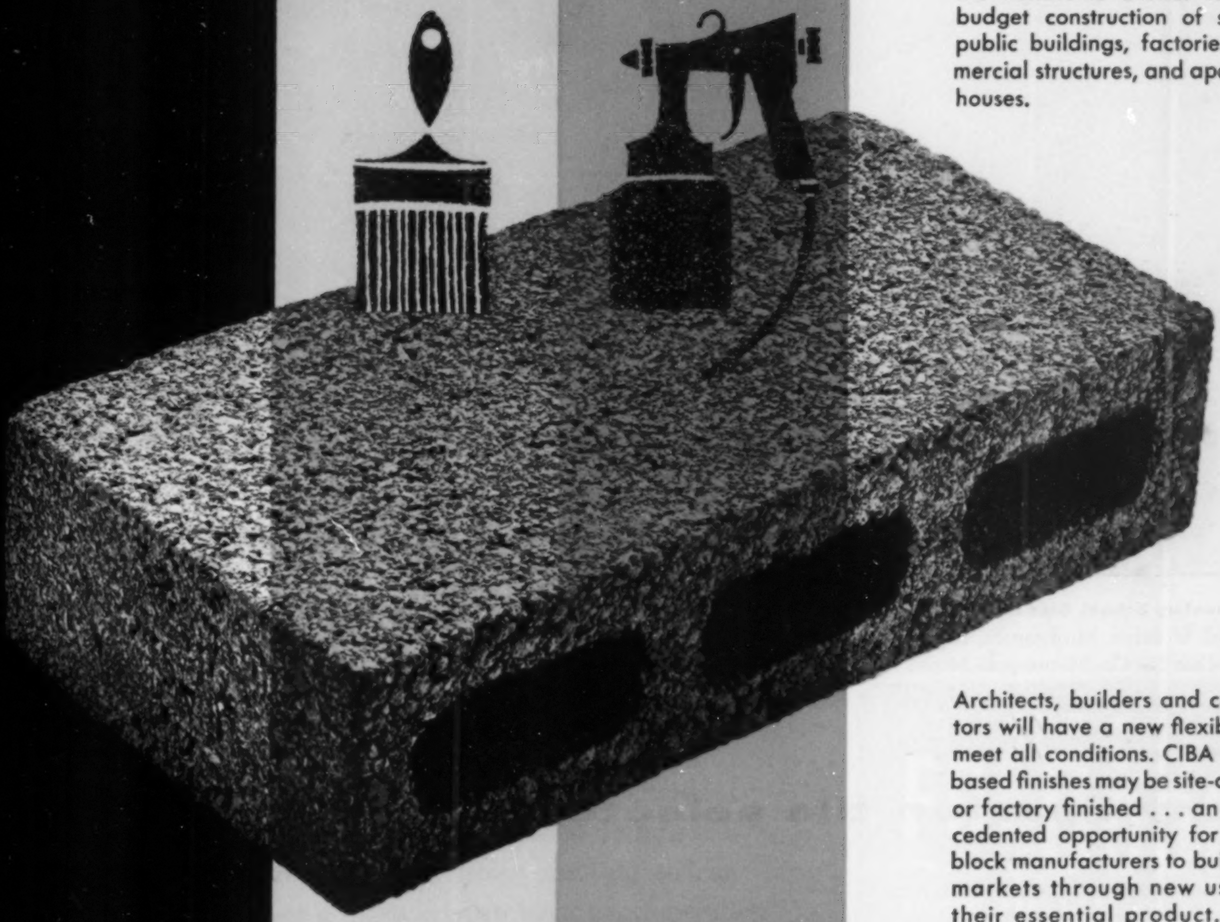

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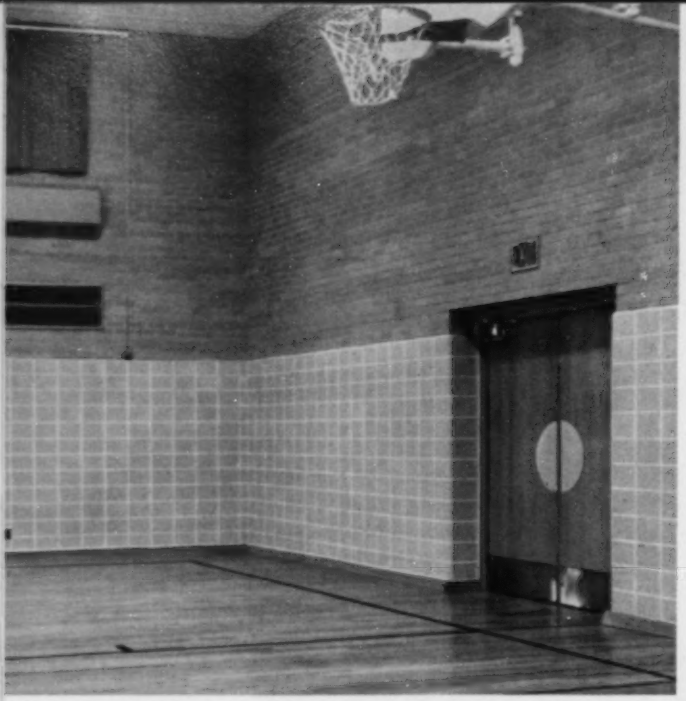

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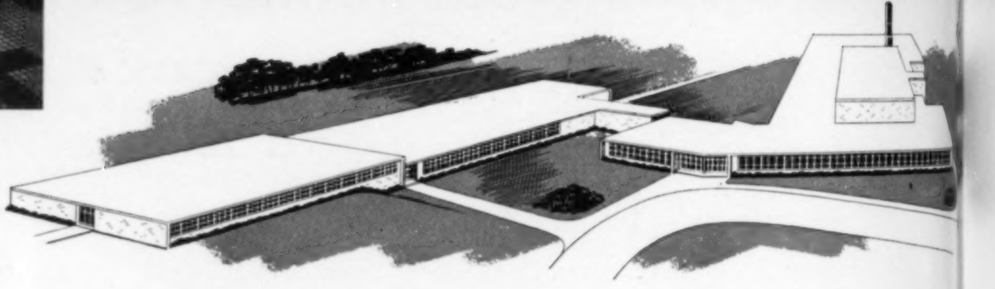

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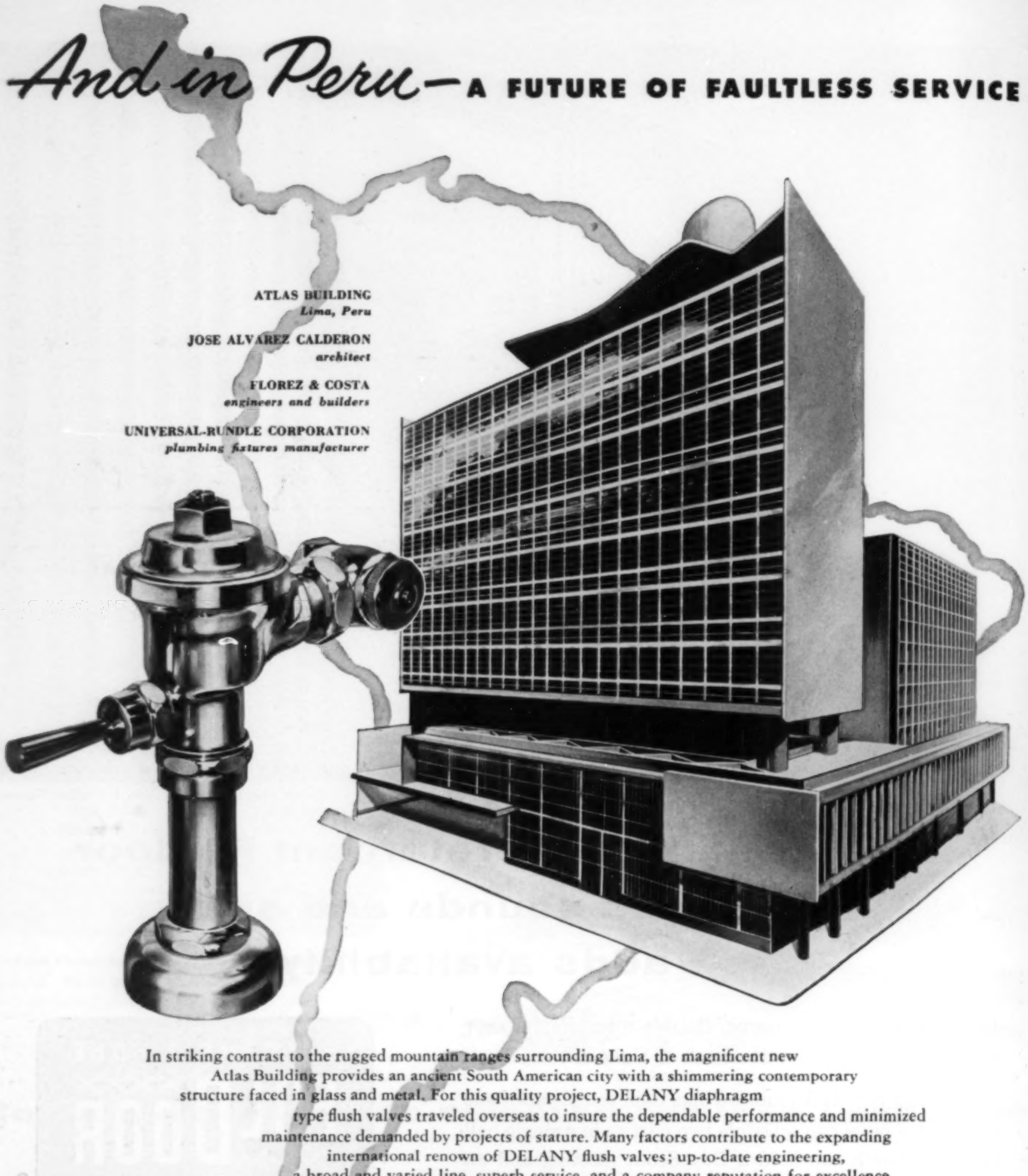

ATLAS BUILDING
Lima, Peru

JOSE ALVAREZ CALDERON
architect

FLOREZ & COSTA
engineers and builders

UNIVERSAL-RUNDLE CORPORATION
plumbing fixtures manufacturer

In striking contrast to the rugged mountain ranges surrounding Lima, the magnificent new Atlas Building provides an ancient South American city with a shimmering contemporary structure faced in glass and metal. For this quality project, DELANY diaphragm type flush valves traveled overseas to insure the dependable performance and minimized maintenance demanded by projects of stature. Many factors contribute to the expanding international renown of DELANY flush valves; up-to-date engineering, a broad and varied line, superb service, and a company reputation for excellence dating back to 1879. Add the plus factors and decide on DELANY . . . "the fastest growing name in flush valves!"

EXTERNAL ADJUSTMENT . . . ONE MORE REASON WHY DELANY FLUSH VALVES LEAD THE FIELD IN DESIGN AND DEVELOPMENT

The external adjustment of Delany Flush Valves is just one more example of the outstanding product design that's causing more and more plumbing men to switch to Delany. Instant on-the-job regulation of the flushing cycle is accomplished with only a twist of a screwdriver. Valve remains on line . . . no need to even turn off the water supply. Saves the installer's time . . . decreases owner's water consumption.

DELANY
Flush
VALVES

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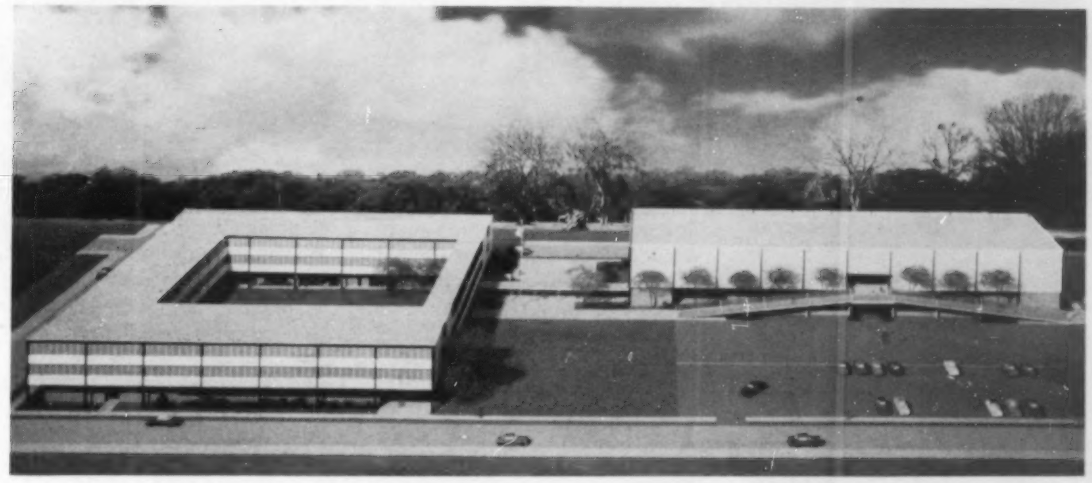
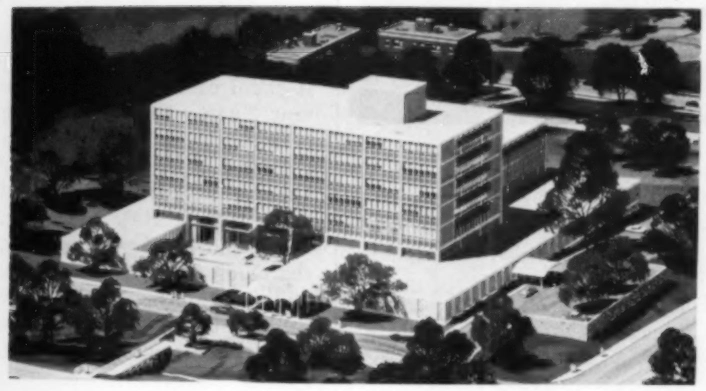
IN CANADA: THE JAMES ROBERTSON CO. LTD.

Projects

A roundup of recent and significant proposals



FRANK LOTZ MILLER

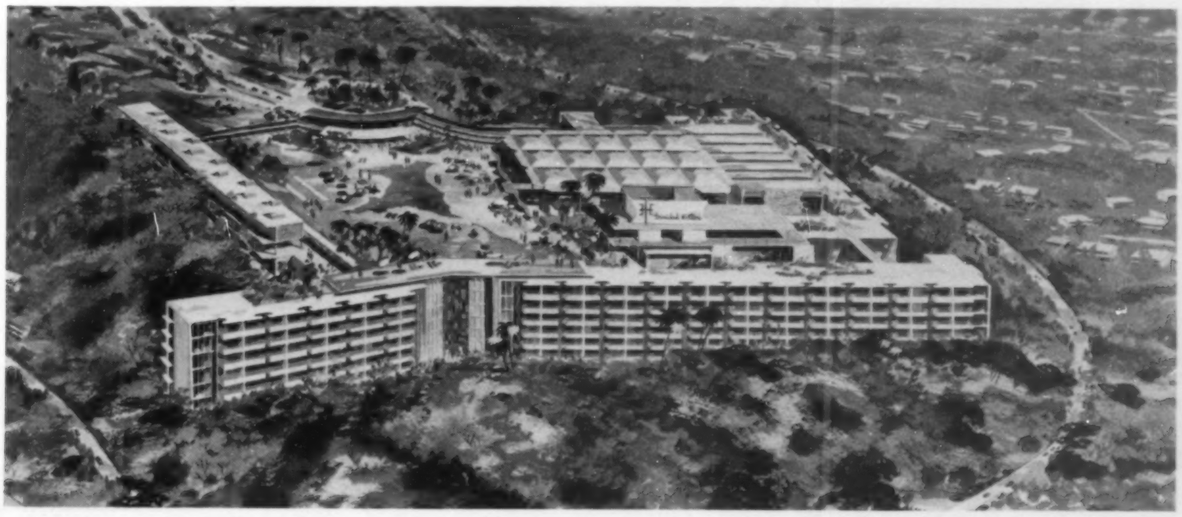


CAPITAL HOSPITAL

With the help of $3 million from Congress—$900,000 to be repaid by the District in 33 years—Washington, D.C. hopes to build the $6 million 250-bed hospital shown at left. Six floors of hospital rooms will rise from a broad base containing operating rooms, outpatient department, and other facilities. Architects: Sherlock, Smith & Adams, Montgomery, Alabama.

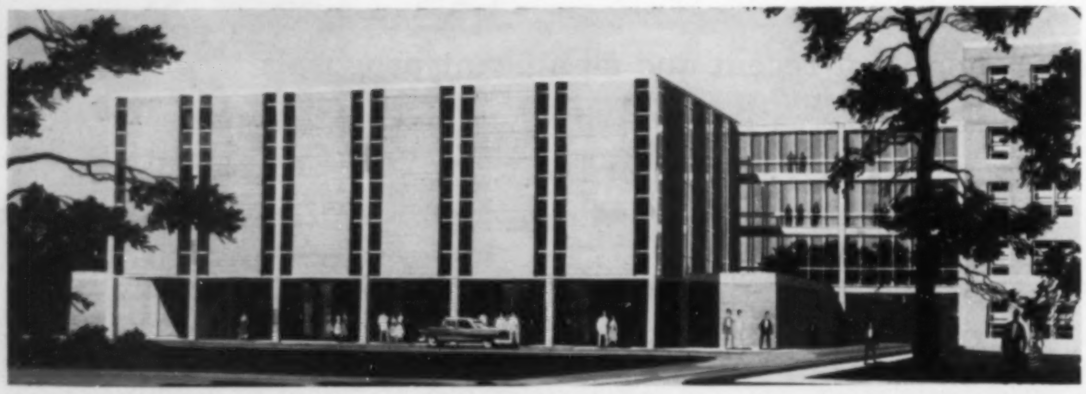
NEW ORLEANS SCHOOL

Two blocks of run-down houses in a substandard section of New Orleans will be razed to make room for the $1.5 million James Derham Junior High School (above) designed by Ricciuti Associates. To keep out glare and darken classrooms for visual aid programs, the architects and a local manufacturer devised a special window with glass louvers on the inside, extruded aluminum louvers outside.



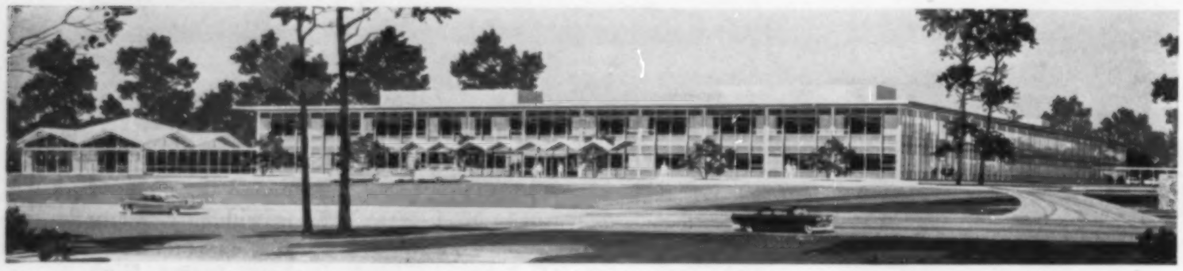
TOPSY-TURVY HOTEL

First-time guests at the Trinidad Hilton in Port of Spain may be a bit startled to find their rooms a short elevator ride *down* from the entrance. To take advantage of the hillside setting, Architects Warner, Burns, Toan & Lunde, New York, and Toro Ferrer, Puerto Rico, spread guest rooms, dining rooms, and service areas over several terraced levels. They even provided space for a steel band and a West Indian restaurant.


DAVIS STUDIO

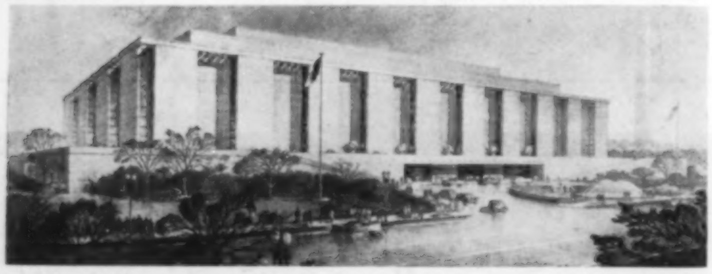
LARGER HOSPITAL

Georgetown University in Washington, D. C. will add a $3 million research and diagnostic building (above) to its Medical Center. Faulkner, Kingsbury & Stenhouse of Washington designed the brick, limestone, and glass building. A passage will connect it to the existing hospital.



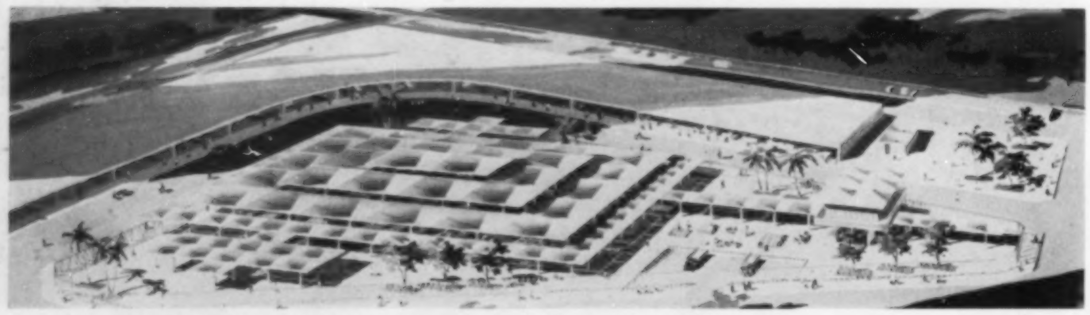
PRU REGIONAL OFFICE

Frank Grad & Sons of Newark, New Jersey designed a $3 million office building (above) for the Prudential Insurance Company of America. The Linwood, New Jersey offices will be faced with glass and porcelain-enameled aluminum.



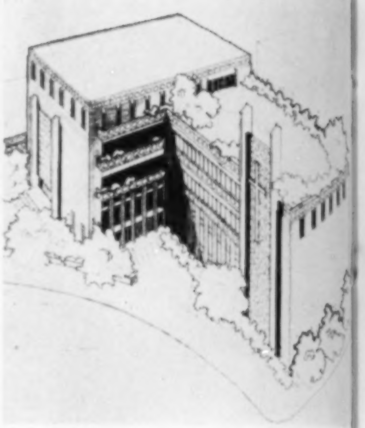
SMITHSONIAN ADDITION

The Smithsonian Institution, affectionately known as "the nation's attic," will build a Museum of History and Technology. Designed by McKim, Mead & White, it will be "contemporary in design but classical in spirit."



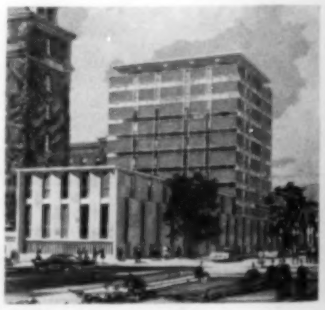
TROPICAL MARKET

Giving an old-world tradition a new twist, Architects Ballard, Todd & Snibbe designed an open-air municipal market for Montego Bay, Jamaica. The roof consists of four levels of concrete hyperbolic paraboloids of various sizes which overlap. Light and air are admitted between the overlapping planes.



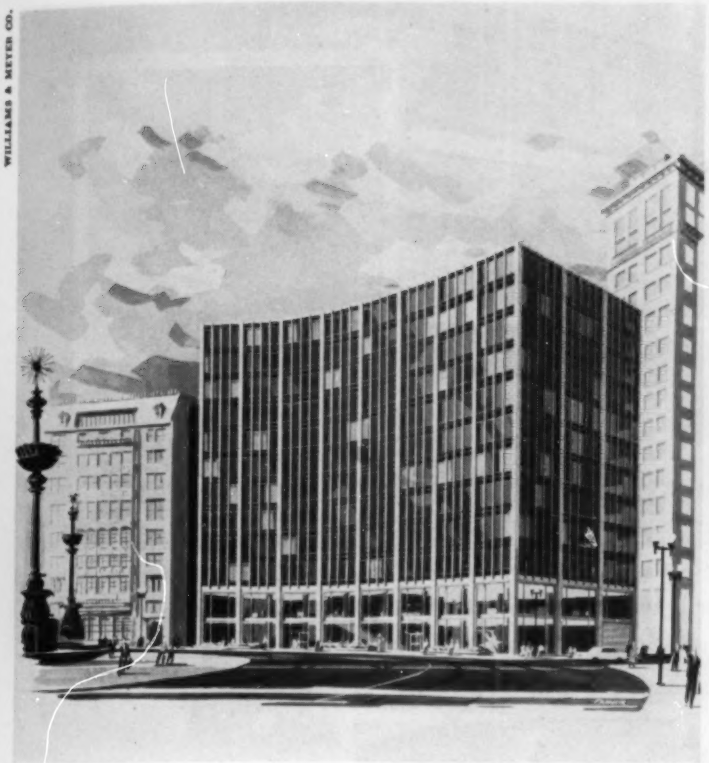
CHURCH CENTER

A small community of Protestant Puerto Ricans is raising $750,000 to build La Hermosa Church and Community Center (above) at Fifth Avenue and 110th Street, New York City. Brick and reinforced concrete, the chief structural materials, will be supplemented by a cast ornamentation made in Puerto Rico. Architect: Edgar Tafel.



BARNARD DORMITORY

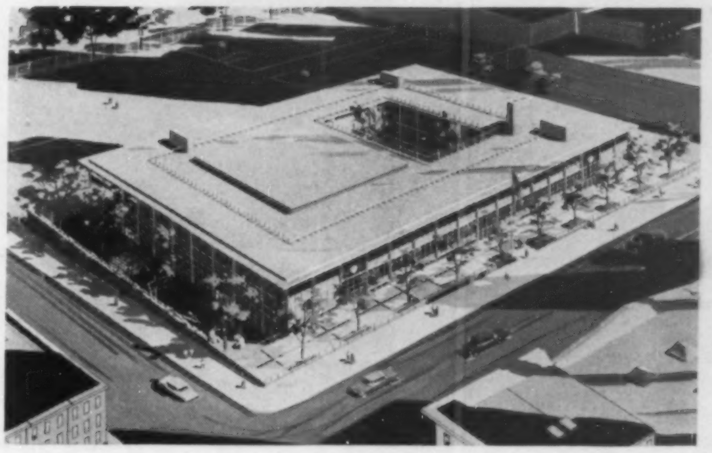
Several generations of Barnard girls have matriculated since the last new building was erected on the school's New York City campus in 1925. To take care of increased enrollment (up to 1,500), Barnard will build a $2 million nine-story dormitory and smaller student center of glass and brick, designed by Architects O'Connor & Kilham.



WILLIAMS & MEYER CO.

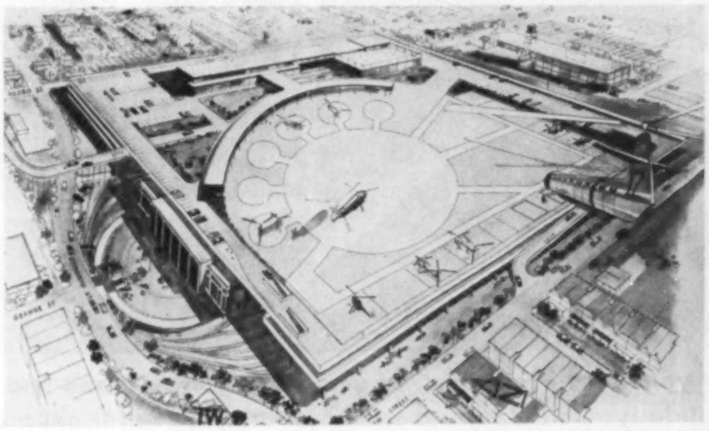
INDIANAPOLIS OFFICES

One of the first multi-tenant office buildings designed by Skidmore, Owings & Merrill is the 12-story Fidelity Building (above) in Indianapolis. SOM persuaded the owner to set the entire building back 12 feet at grade so that the aluminum-and-glass shaft could rise a maximum 150 feet on Monument Circle.



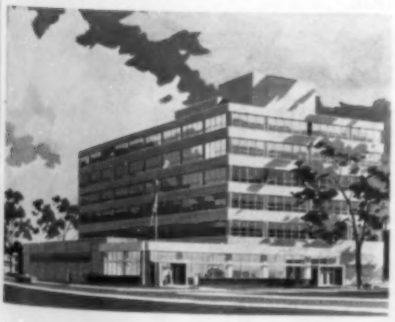
ELEMENTARY SCHOOL ON A SLOPING SITE

New York City's Board of Education will build this 44-classroom, glass-walled elementary school in the Bronx. The rectangular building, designed by Ballard, Todd & Snibbe, will be two stories high in front and three in the rear, and have a small inner court. Estimated total cost: $3 million.



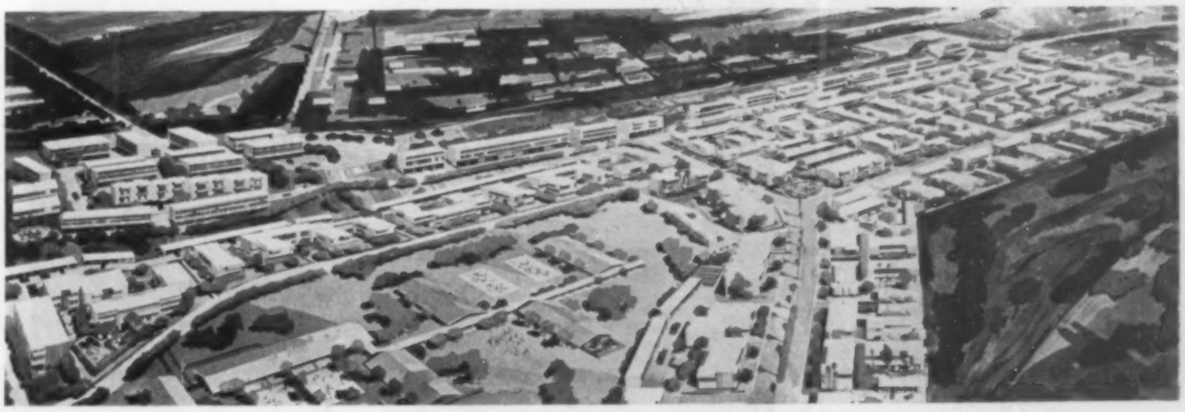
THREE-WAY DESIGN

This combination heliport, shopping center, and parking garage will go up at the end of Philadelphia's Broad Street subway line. Designed by Thalheimer & Weitz, Philadelphia architects, the three-level reinforced concrete open deck garage will have escalators to all floors, and will have stalls equipped with meters for self-service operation.



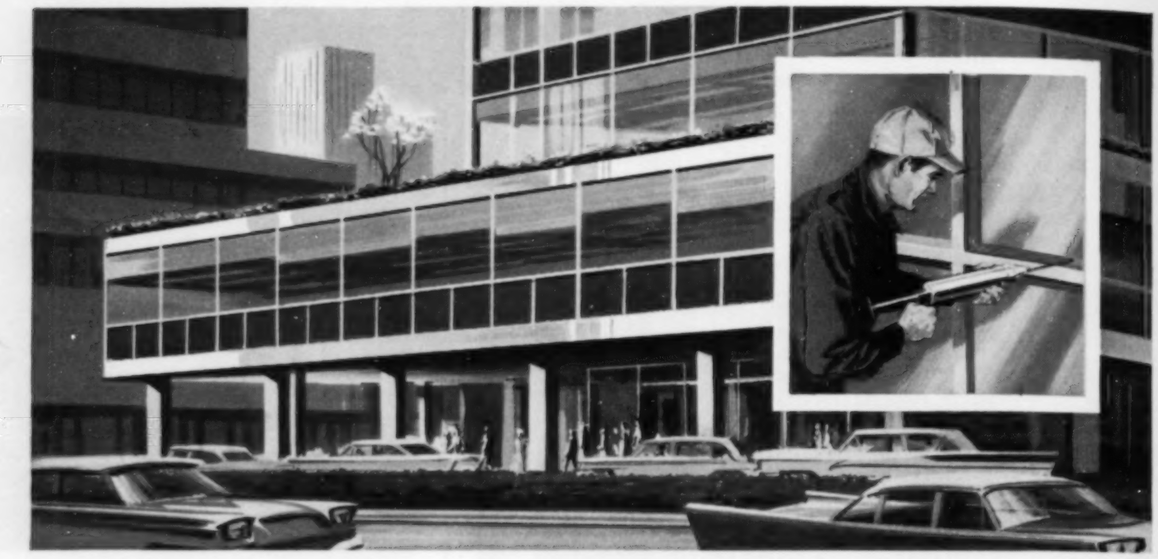
FEDERAL OFFICES

In this new $2.7 million six-story federal building in Burlington, Vermont, marble will be used as trim. Also featured are aluminum piers, a ground-floor façade of marble, glass, and aluminum panels, and red brick spandrels. Architects: Freeman - French - Freeman, Burlington.

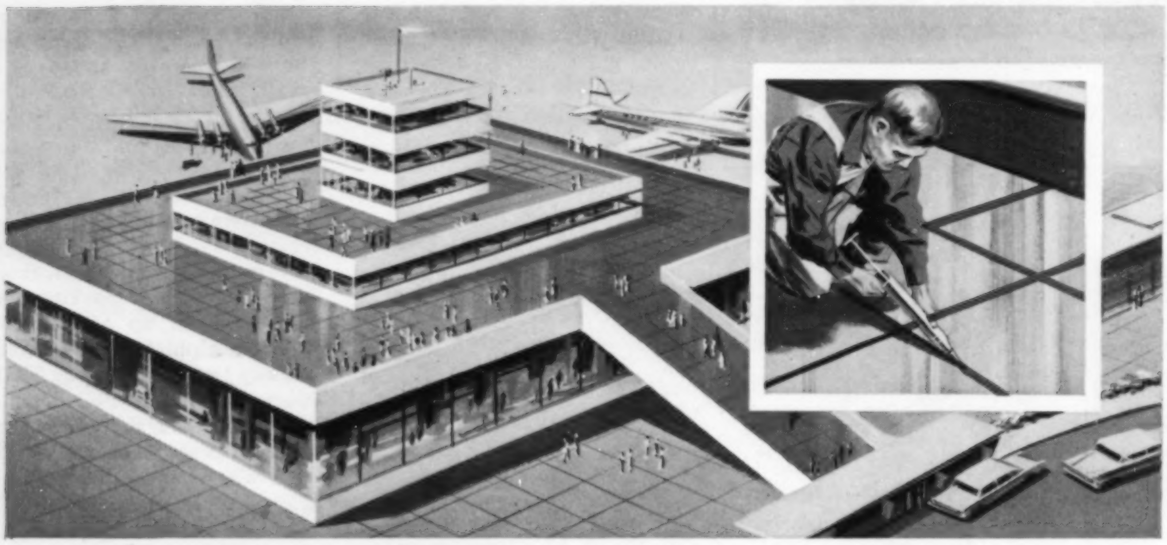


APARTMENT CITY

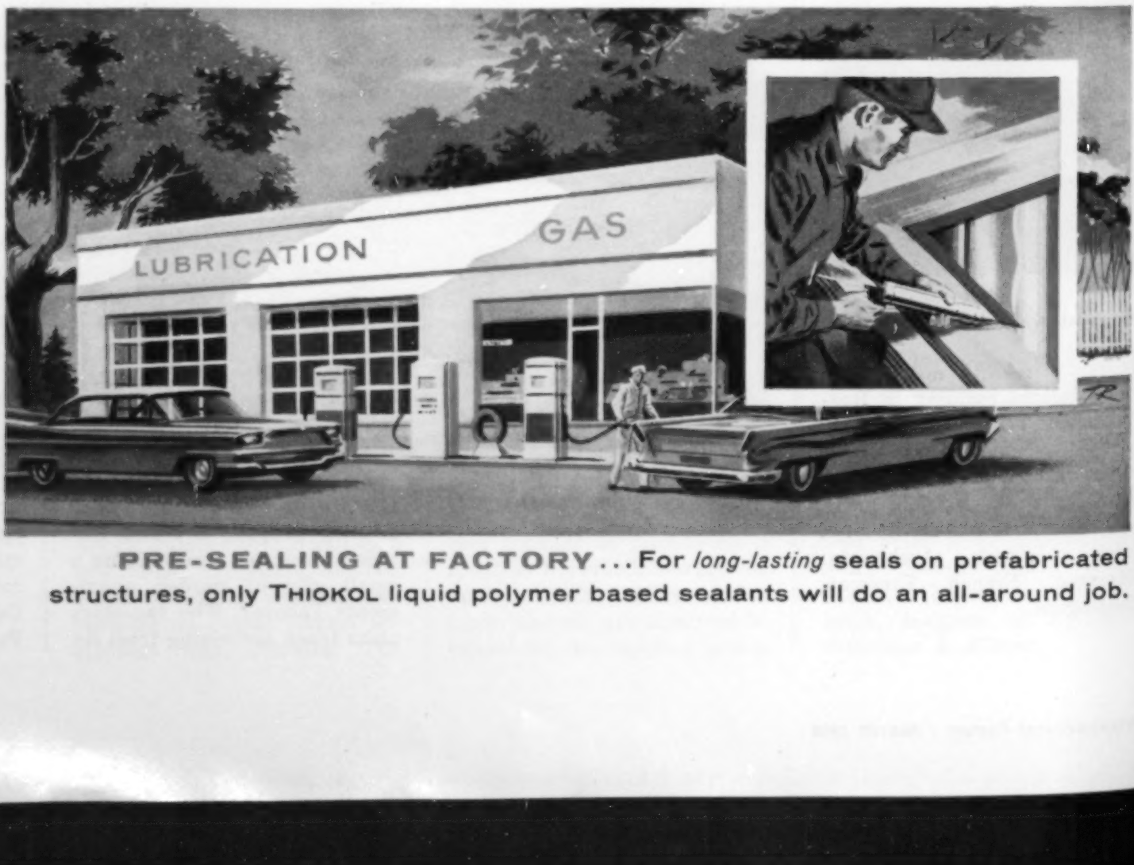
On the site of a vacated public housing project, two Los Angeles developers are building a small city of garden apartments (above). The two-story units (each containing from six to 30 apartments), ten swimming pools, parking areas, and other community facilities will cover 58 acres of San Diego County, California. Architects: Palmer and Krisel.



CURTAIN WALL ... For *sure* sealing protection on curtain wall buildings, specify new elastomeric type sealants based on THIOKOL liquid polymers.



ROOFTOP ... If you want *weather-defying* seals on rooftop areas and ramps, specify modern polysulfide type elastomeric sealants—not conventional materials.



PRE-SEALING AT FACTORY ... For *long-lasting* seals on prefabricated structures, only THIOKOL liquid polymer based sealants will do an all-around job.

When you want a building sealed... against movement and weathering ...specify

Thiokol polysulfide type elastomeric sealants

ELASTOMERIC-TYPE sealants based on THIOKOL liquid polymers are solving a wide variety of sealing problems in applications where ordinary caulking compounds have proven inadequate.

In curtain wall structures, for instance, the severe stress and strain exerted on expansion joints and copings are too extensive for conventional caulking materials. Polysulfide type elastomeric sealants, however, will withstand these strains with ease—and also provide resistance to wind, rain, weather and ozone.

Not only do they effectively adhere to glass, aluminum, porcelain, enamel, or any other building materials, but they also provide a seal for sure protection against buffeting winds. As a matter of fact, THIOKOL liquid polymer based sealants last so many years longer than conventional compounds, that they bring about reductions in the cost of curtain wall maintenance.

Highly Resistant to Oils and Solvents

Elastomeric sealants are also ideal for sealing joints in masonry and tile and other materials. They are extremely resistant to petroleum oils, solvents and gases. Their flexibility can be adjusted to meet specific applications.

Easily Applied at Ambient Temperatures

Because new thixotropic polysulfide type sealants can be cured at ambient temperatures and applied in a smooth flowing manner, they are especially appealing to manufacturers of prefabricated structures, gas stations, supermarkets, shopping centers, and even complete multi-building units. In fact, modern elastomeric sealants based on THIOKOL liquid polymers are becoming a necessity for *any* building application where exceptionally long-lasting, weather-defying seals are required.

FOR MORE INFORMATION:

Mail coupon to Dept. 32 Thiokol Chemical Corp., 780 N. Clinton Ave., Trenton 7, New Jersey. In Canada: Naugatuck Chemicals Division, Dominion Rubber Co., Elmira, Ontario.

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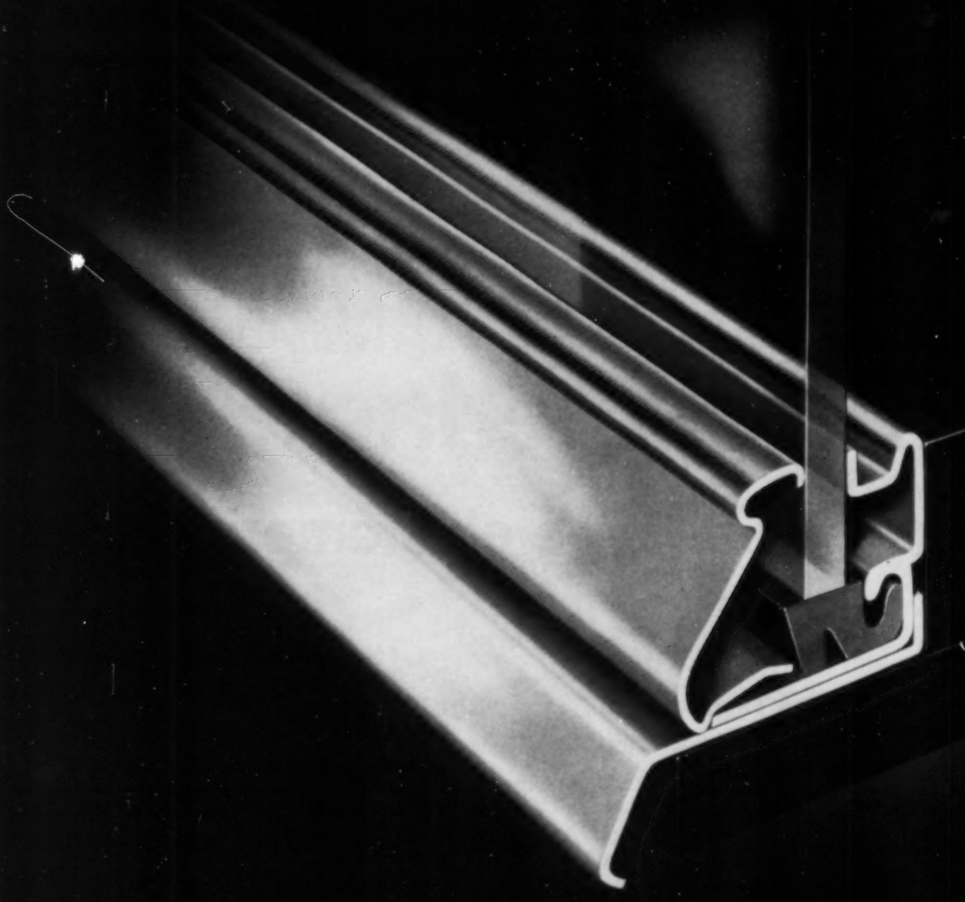

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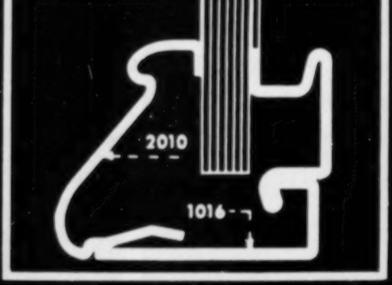


75th ANNIVERSARY 1883–1958

SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

AFL-CIO and builders will fight featherbedding; unions move to end jurisdictional disputes

UP

GRAY

Some cheery news for the building industry came out of not-so-sunny Miami Beach last month. A joint conference of the Building and Construction Trades Department of the AFL-CIO, representing 3 million building laborers, and the National Constructors Association, a group of 24 companies that together do 90 per cent of all heavy industrial building in the country, worked out an agreement to end a number of wasteful labor practices that have plagued builders for years. The principal abuses it seeks to end are featherbedding—use of unnecessary labor on a job—and slowdowns and absenteeism. Also, it points the way to ending labor's long-standing opposition to labor-saving equipment on construction jobs.

The ten-point program outlined by the conference will initially affect only the heavy construction field: building of oil refineries, public utilities, heavy metals mills and chemical plants. But Richard J. Gray, head of the Building Trades Department, predicts that the program will soon spread to the whole building industry.

Among the ten points, these are the most important:

▸"Slowdowns, forcing of overtime, spread-work tactics, standby crews, and featherbedding practices have been and are condemned."

▸"There shall be no limit on production of workmen nor restriction on the full use of proper tools or equipment and there shall not be any task or piece work."

▸"So-called area practices, not a part of collective bargaining agreements, should not be recognized nor should they be enforced."

▸Craft foreman shall be selected by the employer on any job.

▸Workmen shall be at their "regular place of work at starting time and remain at their place of work until the regular quitting time."

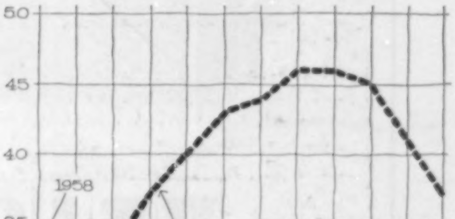
Initial reaction to the labor-builder accord was mixed. At the annual convention of the Associated General Contractors in Dallas (page 12), Frank J. Rooney, head of the AGC's labor committee, said: "The ten points are just fine. But we don't want any more lip service. We'll wait and see how it works on a local level."

While it is true that the real value of the accord will have to be proved in local negotiations, a spokesman for the National Constructors believes that at least the ten-point program gives building employers a strong starting point in bargaining. For one thing, unions will no longer be able to sanction featherbedding on the grounds that a fellow union is doing it. Now, the powerful international union itself has gone on record against featherbedding, and presumably this will help local management fight it. This same spokesman was alone in estimating what the accord might eventually save in building costs—most union leaders and management men would not even guess. He cites some federal building projects, on which featherbedding and other such practices are barred, where costs have run as much as 20 per cent below the cost on other projects in the same area.

Much credit for the accord must go to the 71-year-old Gray, who has headed the Building Trades Department since its organization. Just a few months ago, Gray proposed a one-year moratorium on building wage increases, as a first step in fighting inflation, but other labor leaders at the AFL-CIO convention refused to consider this. Since then he has withdrawn that proposal and come out in support of "wage improvements and other advances" as recommended by AFL-CIO's executive council. The agreement between labor and the builders will not affect labor moves for higher basic wages.

Gray was also instrumental in ironing out some of AFL-CIO's internal troubles last month. At the convention

continued on page 35



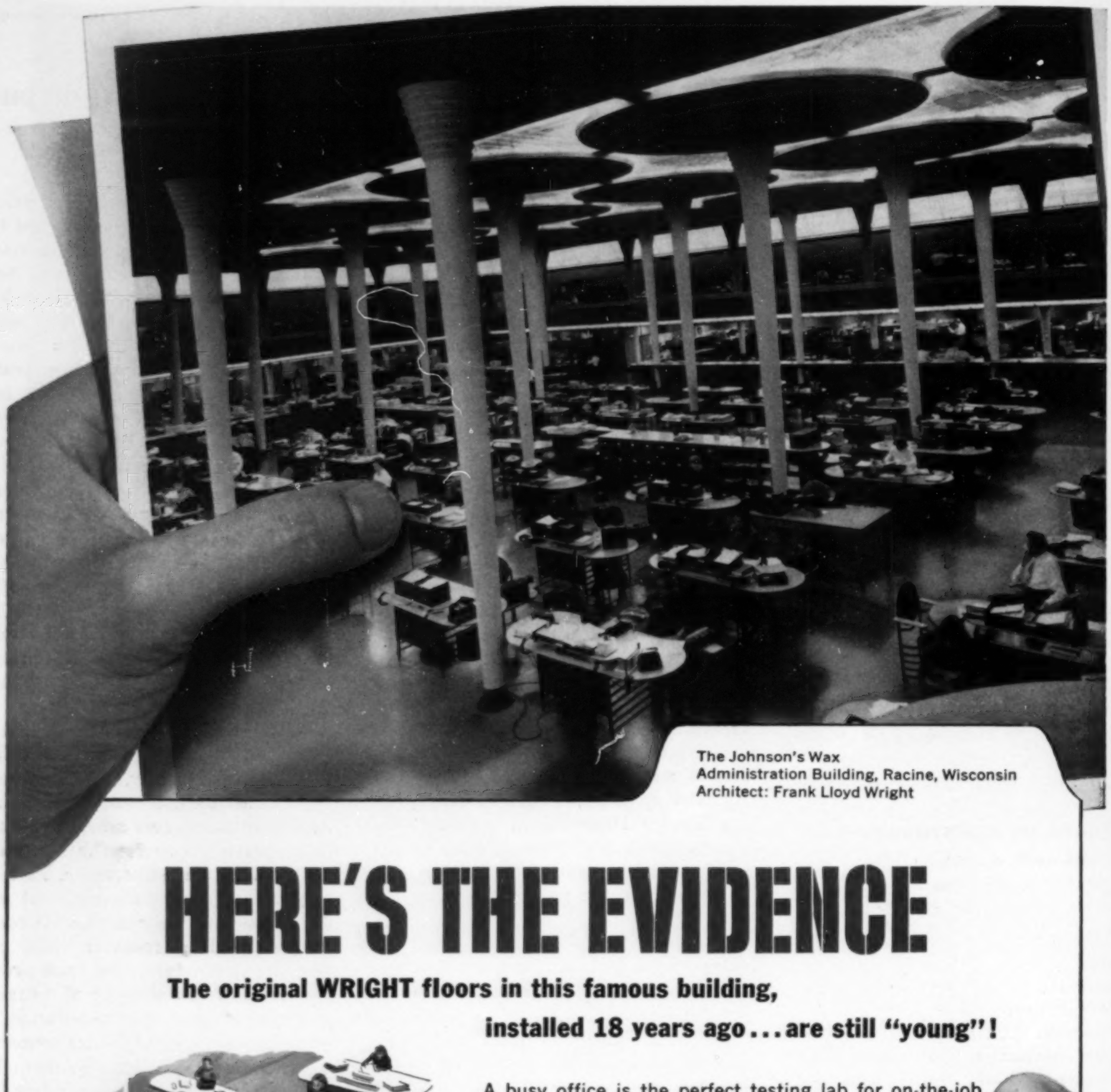
NEW CONSTRUCTION EXPENDITURES in January set a record $3.3 billion for the month, but registered a seasonal drop of 10 per cent fom December 1957.

BOX SCORE OF CONSTRUCTION

(Expenditures in millions of dollars)

PRIVATE BUILDING	January 1958	January 1957	±%
Nonresidential	704	722	—2
Industrial	240	269	—11
Commercial	267	269	—1
Office buildings; warehouses	161	143	+13
Stores; restaurants; garages	106	126	—16
Religious	68	67	+1
Educational	42	43	—2
Hospital; institutions	47	33	+42
Residential (nonfarm)	1,116	1,137	—2
Public utilities	428	357	+20
*PRIVATE TOTAL	2,361	2,324	+2
PUBLIC BUILDING			
Nonresidential	341	339	+1
Industrial	30	44	—32
Educational	228	214	+7
Hospital; institutions	22	24	—8
Residential	58	29	+100
Military	80	93	—14
Highways	250	225	+11
Sewer; water	96	100	—4
*PUBLIC TOTAL	924	874	+6
*GRAND TOTAL	3,285	3,198	+3

* *Minor components not shown, so total exceeds sum of parts.*



The Johnson's Wax
Administration Building, Racine, Wisconsin
Architect: Frank Lloyd Wright

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The original WRIGHT floors in this famous building,
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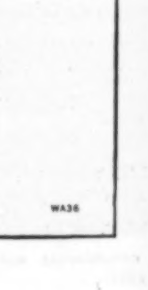

A busy office is the perfect testing lab for on-the-job performance of a flooring. Wright passes with ease . . . surpasses expectation. There's still a long life ahead for this 18-year-old floor (of course, it's waxed regularly).

For projects requiring colorful, luxurious flooring that's quiet, comfortable and easily maintained, specify Wright Rubber and Vinyl Tile with confidence. There's plenty of proof that Wright is not only one of the most beautiful but also the most practical of floor tiles.

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WA36

last fall, the Building Trades Department had threatened to quit the AFL-CIO over its jurisdictional fight with the industrial unions. An earlier move to give craft unions jurisdiction over new building and industrial unions jurisdiction over maintenance of existing structures had not worked out. In the face of open opposition by powerful industrial unions formerly part of CIO, the craft unions (formerly part of AFL) were seriously considering leaving the merged AFL-CIO.

Now, however, a new attempt at conciliation has been successful. An agreement has been made along the same lines as the previous one, but this time interunion bargaining machinery has been established to deal with disputes that fall in the so-called "in-between zone." This was the area involving major plant overhauls and other jobs that are neither new building nor maintenance. This was the focus of last year's disagreement between the craft unions and industrial unions.

BUILDING MONEY

Money gets easier in wake of lagging demand for investment funds and federal moves to lower rates

Even though economic uncertainties mounted last month, builders and lenders could look for relief from at least one major problem — building money was easier to get than at any time in nearly two years, and it was beginning to get cheaper.

Last month, there were these solid indications of generally easier money:

▶ The Federal Reserve Board lowered reserve requirements for its member banks, making $500 million more immediately available for investment.

▶ The U.S. Treasury was able to sell a 32-year bond at 3½ per cent, compared to 3⅞ per cent paid on another long-term issue last autumn. On a one-year certificate, the drop in interest was even more striking. The Treasury put a 2½ per cent coupon on its latest issue, part of its $16.8 billion refinancing, compared to the 3¾ per cent rate on last year's certificate offering.

▶ The bellwether of short-term interest rates, the rate on 30-day Treasury bills, skidded to a 31-month low of 1.58 per cent last month, after reaching as high as 3.66 per cent last October.

▶ The New York State Thruway Authority was able to borrow $50 million at 3.1 per cent. Last November, Comptroller Arthur Levitt turned down a bid of 3.5 per cent for the bonds, and thereby saved $5.5 million by waiting until rates dropped.

These signs of easing money followed two earlier Federal Reserve moves to lower the discount rate—the rate at which member banks can borrow from the Fed—from 3½ per cent to 2¾ per cent. Sparked by these moves, some commercial banks have recently dropped the rate they charge "prime" borrowers from 4½ per cent to 4 per cent. Also, the Federal Home Loan Bank of Chicago lowered the interest rate it charges its member savings and loan associations for advances from 4¼ per cent to 3¾ per cent. By the middle of last month, other Home Loan Bank Boards had followed Chicago's lead. Since savings and loan associations supply about 40 per cent of all mortgage credit, this will have the effect of freeing more money for mortgage investment.

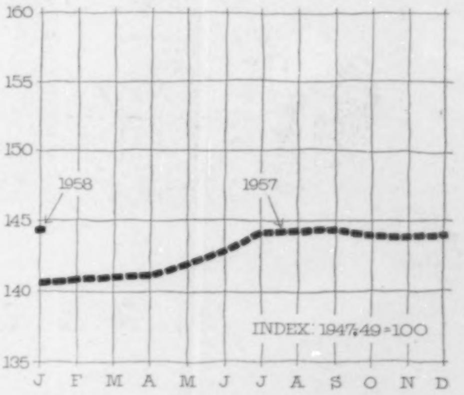
Besides the current easing of money rates, there are four other indications of a further broadening supply of long-term funds in coming months: 1) According to the New York investment banking firm of Salomon Bros. & Hutzler, there will be a total of $21.9 billion available for long-term investment this year, comfortably more than the estimated $21.4 billion demand for these funds. 2) There has been a larger than seasonal drop in business loans from commercial banks so far this year, and 3) other lending institutions, such as insurance companies and pension trusts, have not noticed any slowdown in the growth of their investable funds, which make up the largest supply of long-term money. 4) A survey by the National Association of Real Estate Boards, while it did not turn up any noticeable changes in interest rates on residential mortgages, indicated such changes would not be far off. Oliver M. Walker, chairman of the committee making the survey, said, "Mortgages at current rates will look attractive and be eagerly sought six months from today. It now appears that there will be more money than mortgages available during the year."

BUILDING ACTIVITY

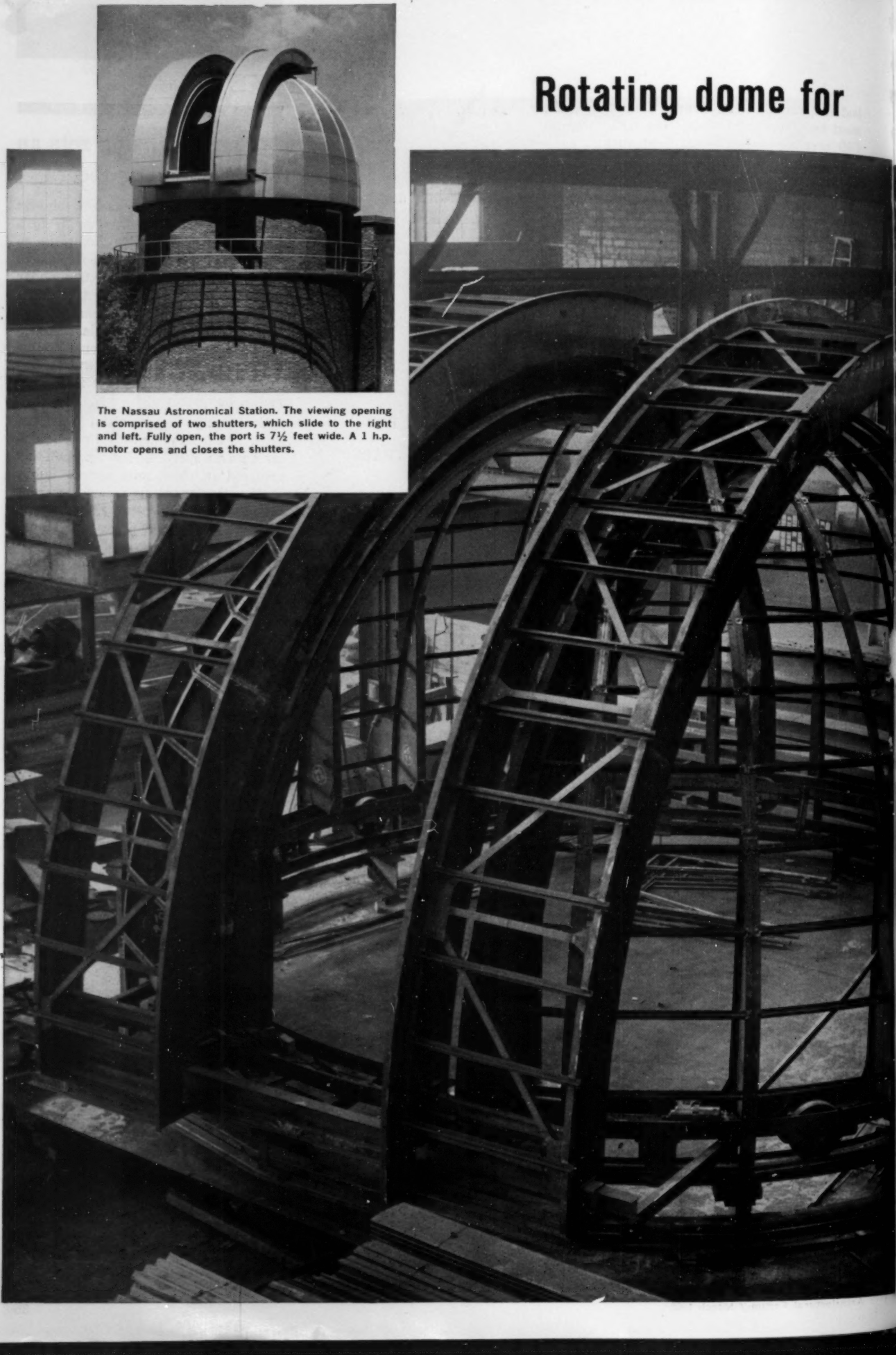
January spending sets an unconvincing record

What still shapes up as the biggest building year in history got off to a spotty start in January. According to figures of the Department of Commerce and Bureau of Labor Statistics, dollar volume of construction activity in January was up 3 per cent from January 1957, but 10 per cent below last December. (The 10 per cent seasonal decline from December to January was termed "no more than usual" by BLS-Commerce, however.)

Continuing the trend of the past year, in January almost all of the dollar gain in spending for new building occurred in the public sector. Public construction spending rose 6 per cent over the previous January level, while private spending was up less than 2 per cent. In terms of physical volume, private building actually was lower than a year ago, and public building was up 2 to 3 per cent. In dollar volume, private residential building, the biggest single category in over-all construction expenditures, was still lagging behind year-ago levels. However, under the cajoling of federal money managers, residential starts are currently looking a lot healthier than they have for some time. BLS-Commerce point out that the slight drop (2 per cent) in January was the smallest year-to-year decline in new private dwelling units since January 1956. January starts were at a seasonally adjusted annual rate of 1,030,000, up from 970,000 in December. And January volume of FHA-insured mortgage applications was 64 per cent higher than a year ago, and 37 per cent above December 1957.



CONSTRUCTION COSTS in nonresidential building edged upward for the second month in a row, following two months of decline. The E. H. Boeckh & Assoc. index was 144.3 in January, up 0.2 points from December.



The Nassau Astronomical Station. The viewing opening is comprised of two shutters, which slide to the right and left. Fully open, the port is 7½ feet wide. A 1 h.p. motor opens and closes the shutters.

Rotating dome for

Case Institute Observatory fabricated from

USS Structural Steel

On a 160-acre site, 1,250 feet above sea level in Northern Ohio, is the Nassau Astronomical Station, established by Case Institute of Technology to analyze the structure of the stellar system.

The observatory building houses a darkroom, a workshop, and living quarters for two observers. Topping the structure is a rotating dome, containing the 24—36-inch Schmidt-type telescope, one of the largest instruments of its type in the world.

The Structural Steel dome was prefabricated to specifications at the Cleveland, Ohio, plant of The Paterson-Leitch Company, then shipped to the observatory site. Although approximately 17 feet high and 28 feet in diameter, the dome is so well-balanced that a mere 5 h.p. motor is all that is needed to rotate it. The dome revolves about a circular track on steel wheels mounted on the underside of its base ring.

Here is another application which points up the precision with which Structural Steel can be used, the ease with which it can be fabricated, and the almost limitless number of ways it can be shaped and formed. Structural Steel is one of the strongest of load-bearing construction materials—yet, paradoxically, it is the most economical. It possesses excellent mechanical properties, effectively resisting tension, torsion, compression and shear. Enclosed in buildings, it lasts indefinitely—requiring no maintenance. It may be riveted, bolted or welded – erected in any weather. And Structural Steel members can be fabricated indoors, where weather will have no effect on the quality of workmanship. We suggest that you fill out and return the attached coupon.

The dome being erected at the observatory.

United States Steel Corporation, Pittsburgh
Columbia-Geneva Steel Division, San Francisco
Tennessee Coal & Iron Division, Fairfield, Ala.
United States Steel Supply Division, Warehouse Dist.
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Shapes
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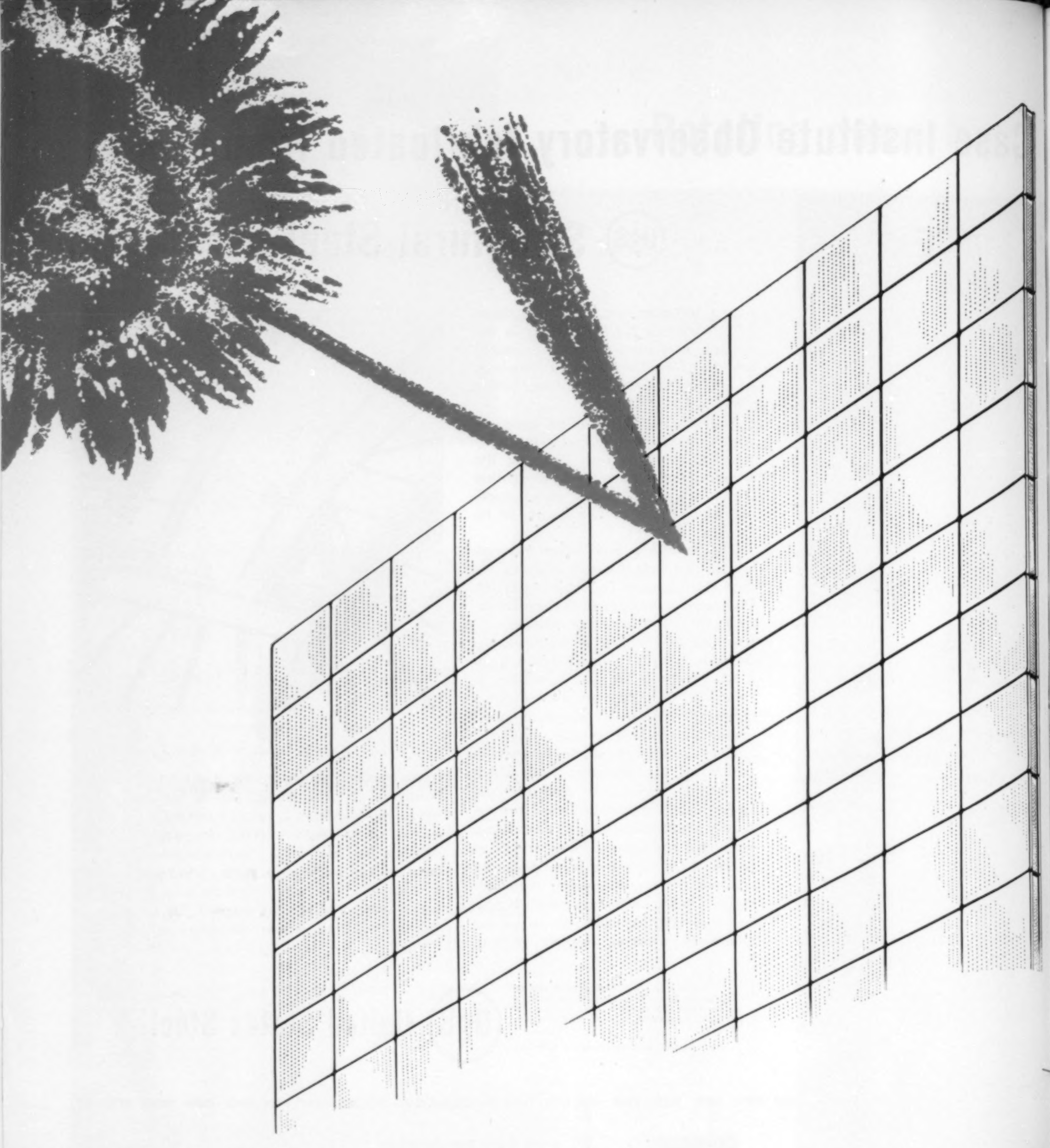
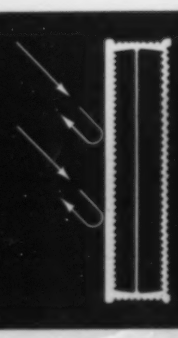
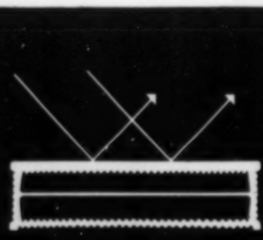




PRISMS REFLECT SUMMER SUN . . . yet readily transmit cool ground-reflected light, weak Winter sun.



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NEW . . . at last, a glass that reflects the hot sun

This is new Owens-Illinois 80-F Glass Block. Its specially designed prisms reflect hot sunlight, transmit cool light rays. 80-F is the new way to keep classroom temperatures at comfortable levels . . . to assure maximum student attentiveness, minimum teacher fatigue.

Planning to build a new school? Remodel an old one? Before you start, be sure to investigate the unique benefits offered by Owens-Illinois 80-F Glass Block. For full information, write Kimble Glass Company, subsidiary of Owens-Illinois, Dept. AF-3, Toledo 1, Ohio.

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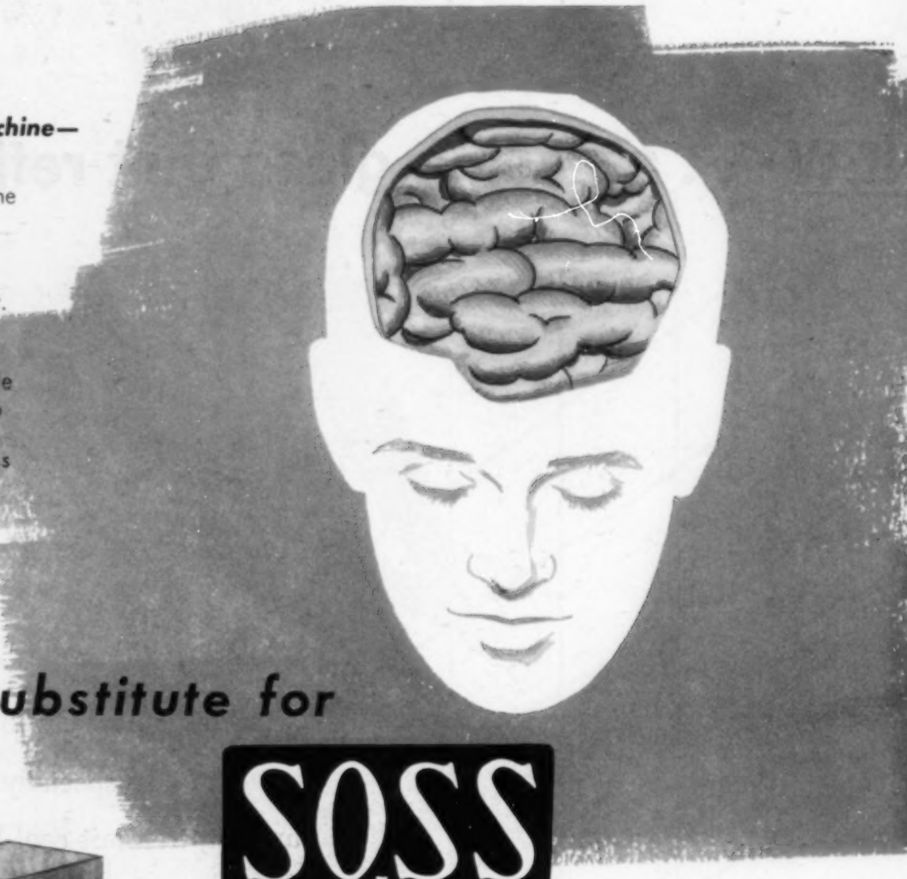
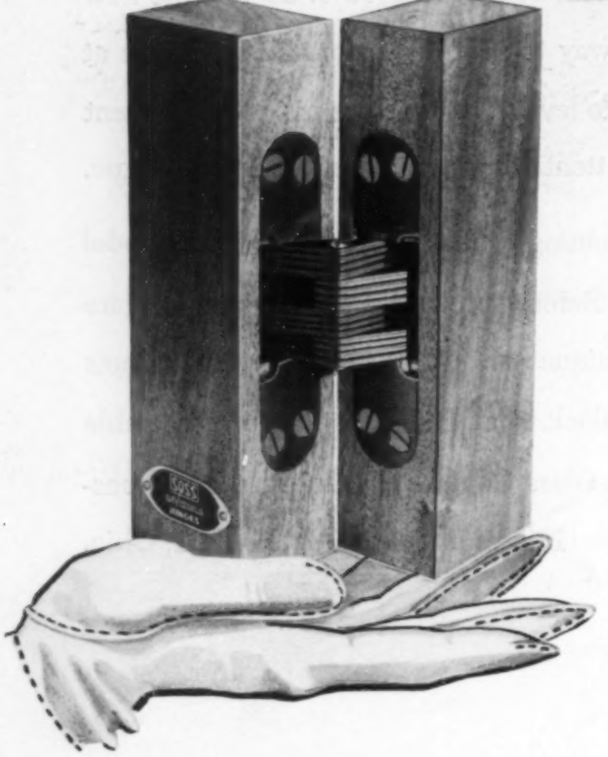
No one has ever built a machine that was endowed with the powers of creation. In all the universe, only man's mind can accomplish this miraculous feat. Some other peculiarities of the brain are: tall people have heavier brains than short people but short people are inclined to have larger heads and brains than tall people. The brain loses weight at the rate of 1 gram every year after reaching maturity at approximately 20 years of age.





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Mobile, Ala.—Photo from interior of Old Spanish Fort Motel restaurant shows that LUSTRAGRAY reduces sun glare, yet provides "clear glass" vision.

Photo from exterior. This main building of Old Spanish Fort Motel has nine full-length picture windows glazed with LUSTRAGRAY by The Prichard Glass Co., Mobile, Ala. **Architects:** *Hammond & Woods, Mobile, Ala.*

GLARE REDUCING SHEET GLASS

Picture windows of american LUSTRAGRAY draw tourist trade

Specify AMERICAN LUSTRAGRAY for your new commercial buildings—and your clients will tell you that the attractive gray windows act as "beacons of welcome."

Here's a case in point. According to the owner of the motel, George Fuller Sr., the LUSTRAGRAY glazing "invites more casual tourist business than any other form of outdoor advertising tried by the Company."

And—from the inside looking out—sun glare is softened by this neutral gray glass. Through giant picture windows, diners enjoy the view of Mobile Bay in bright sunlight without squinting.

AMERICAN LUSTRAGRAY also reduces a significant amount of solar heat, adding considerably to comfort. This economical gray glass is available through more than 500 glass jobbers. Thicknesses: 3/16", 7/32", 1/4". Maximum size: 6' x 10'. Check your classified telephone directory for listing.

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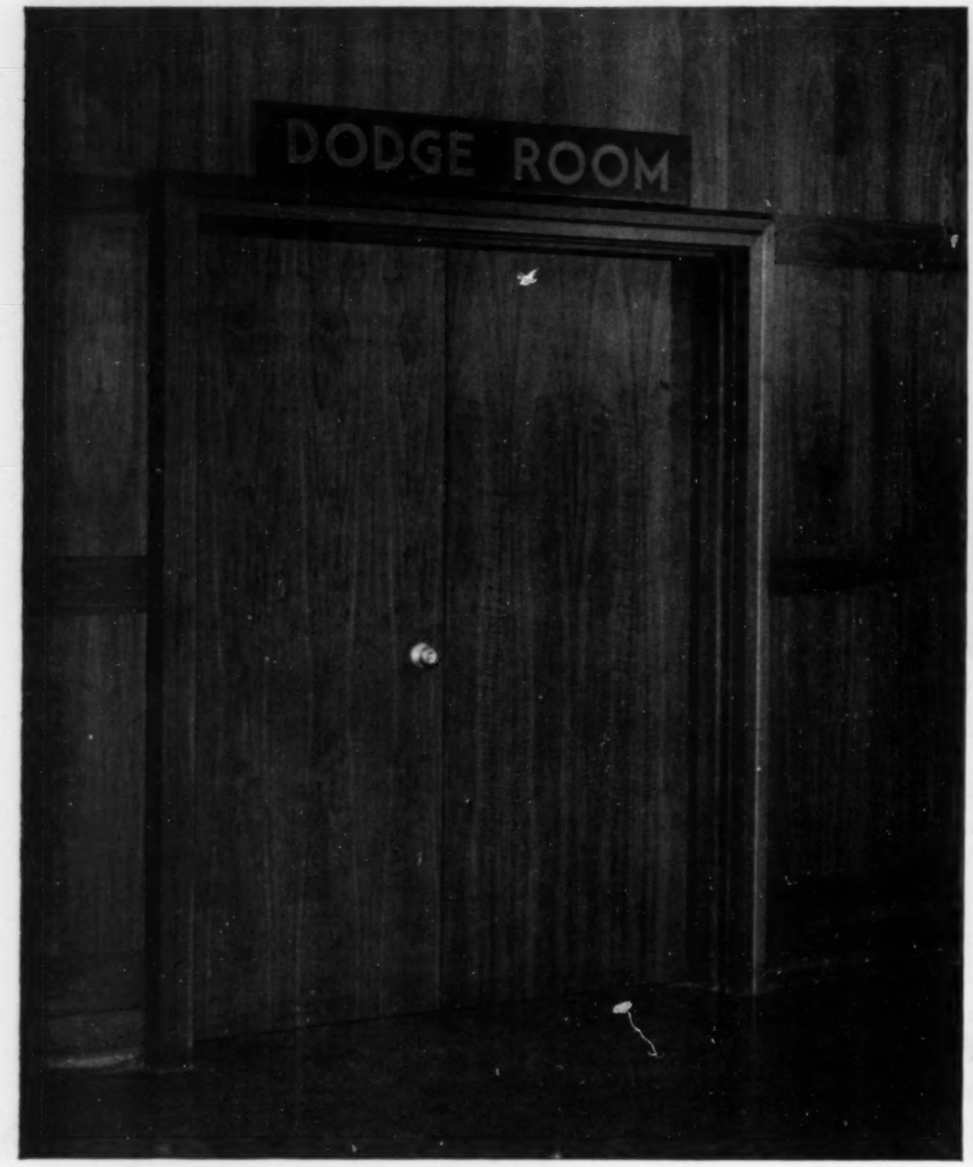

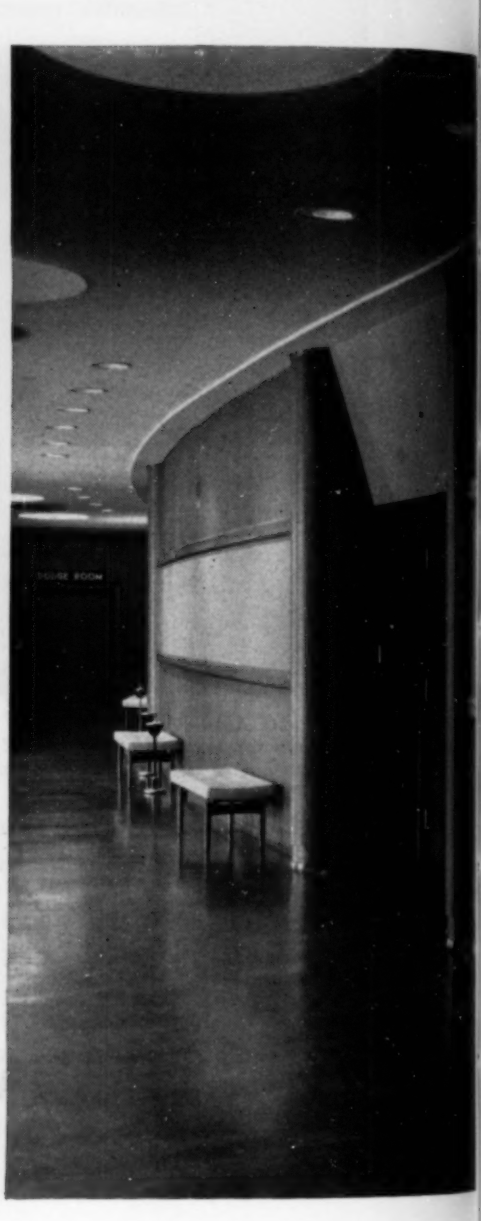

RODDIS DOORS at the College of William and Mary enhance the beauty of the Phi Beta Kappa Memorial Hall (Walford and Wright, Architects). An unlimited choice of domestic and imported woods enables Roddis Doors to fit any design effect you have in mind. You can have these doors without finish . . . *primed and sealed* for finer on-the-job finishing . . . or *completely prefinished* to your sample. Roddis offers a single source for all your wood door requirements—solid and B-label fire doors, guaranteed for life; hollow core doors and X-ray doors.

RODDIS HARDWOOD PANELING was specially chosen to create the striking foyer walls of the Phi Beta Kappa Memorial Hall. Beautiful walnut veneers, hand-selected and matched by Roddis experts, give the rich, dramatic pattern desired. Roddis offers stand-

Doors . . . hardwood paneling . . . Craftwall . . . fine woods for every application.
May we help? Roddis consultants are at the service of America's architects.

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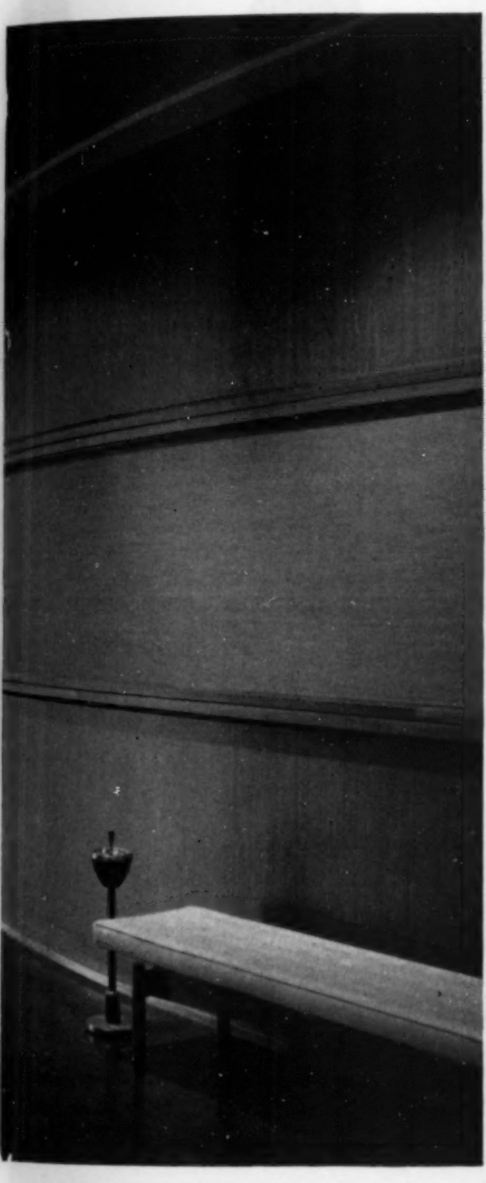

ard panels in a wide variety of woods to achieve any design idea. And Roddis is famous in the field of *custom* hardwood paneling, too. From your specifications Roddis craftsmen will create beautifully matched panels, in any size, to meet your special needs.

RODDIS CRAFTWALL walnut paneling in offices of Slenderella International gives a feeling of efficiency and warmth. Craftwall is ideal for any installation, commercial, institutional or home. Nine handsome woods make design ideas "come to life": maple, cherry, elm, birch (2 tones), oak, mahogany, walnut, knotty pine. Each has an exclusive finish that resists dirt, scuffs and stains. The ¼" panels come in standard or special sizes—fire-retardant if desired. And Craftwall wood paneling is guaranteed by Roddis, in writing, for the life of the installation.

FOR FURTHER INFORMATION SEE *SWEET'S ARCHITECTURAL FILE*, OR WRITE TO

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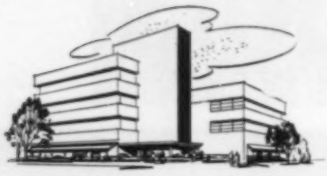
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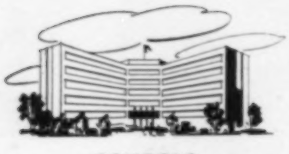
RESTAURANTS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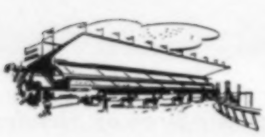
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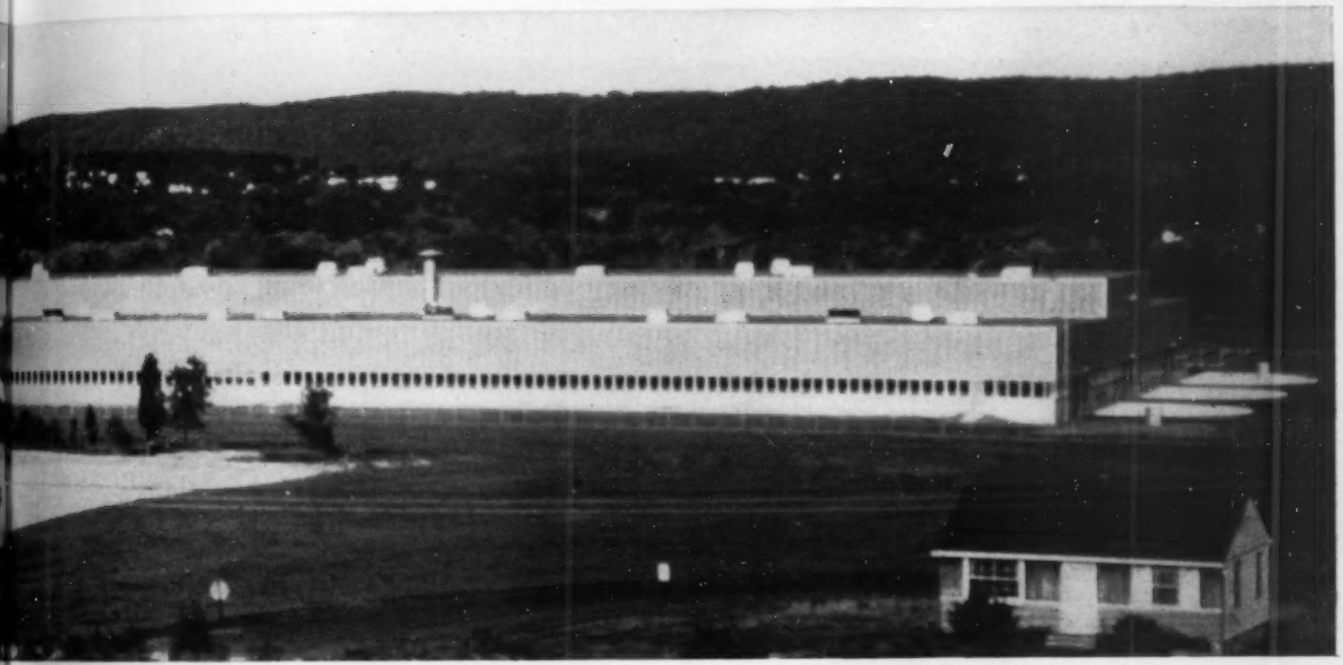
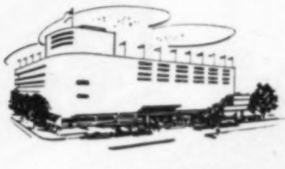


HOTELS



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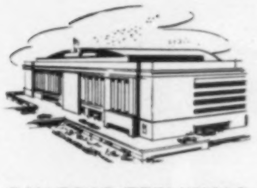
OFFICE BUILDINGS



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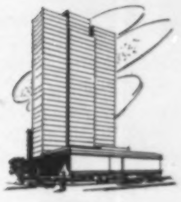

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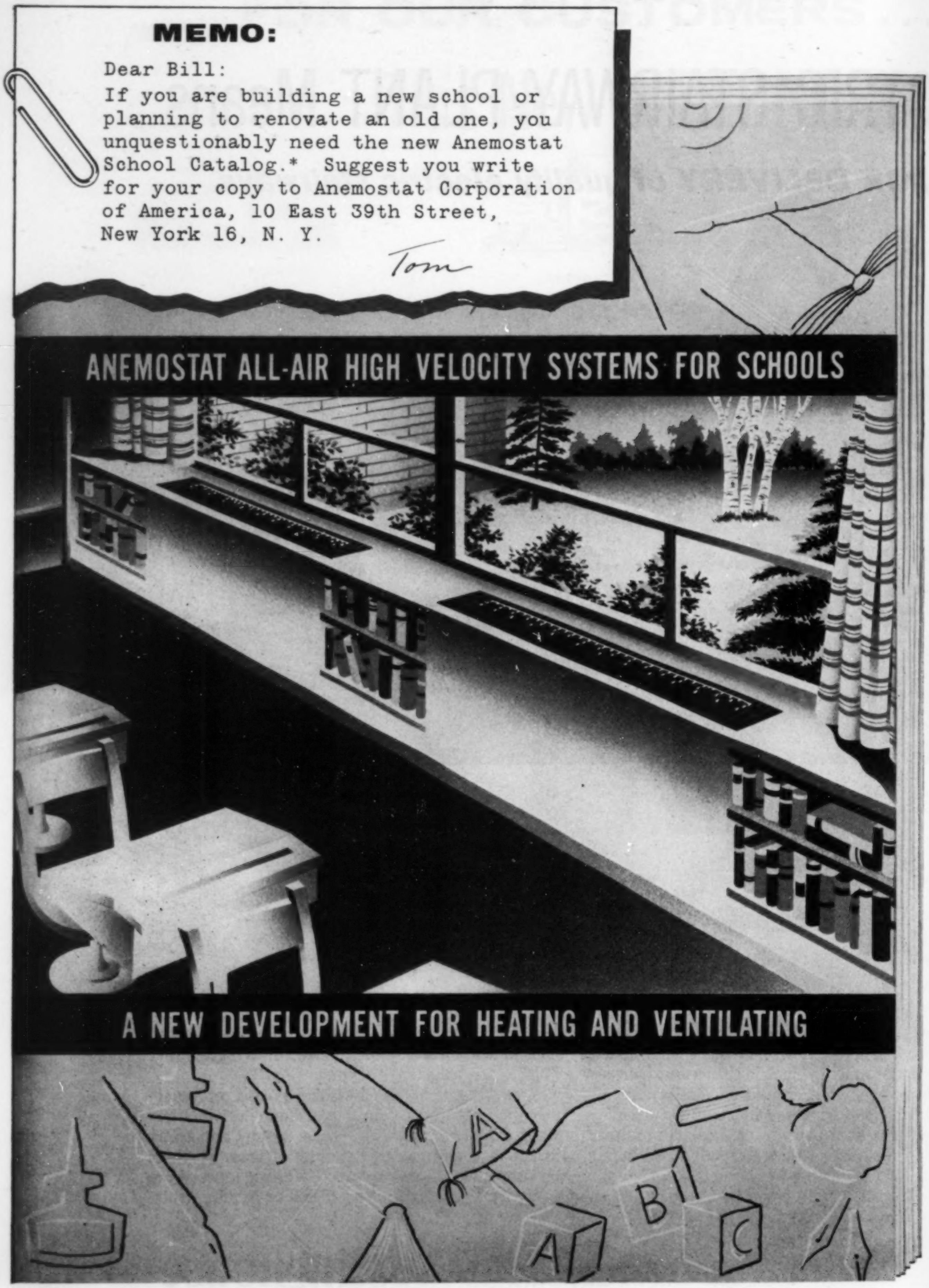

MEMO:

Dear Bill:
If you are building a new school or planning to renovate an old one, you unquestionably need the new Anemostat School Catalog.* Suggest you write for your copy to Anemostat Corporation of America, 10 East 39th Street, New York 16, N. Y.

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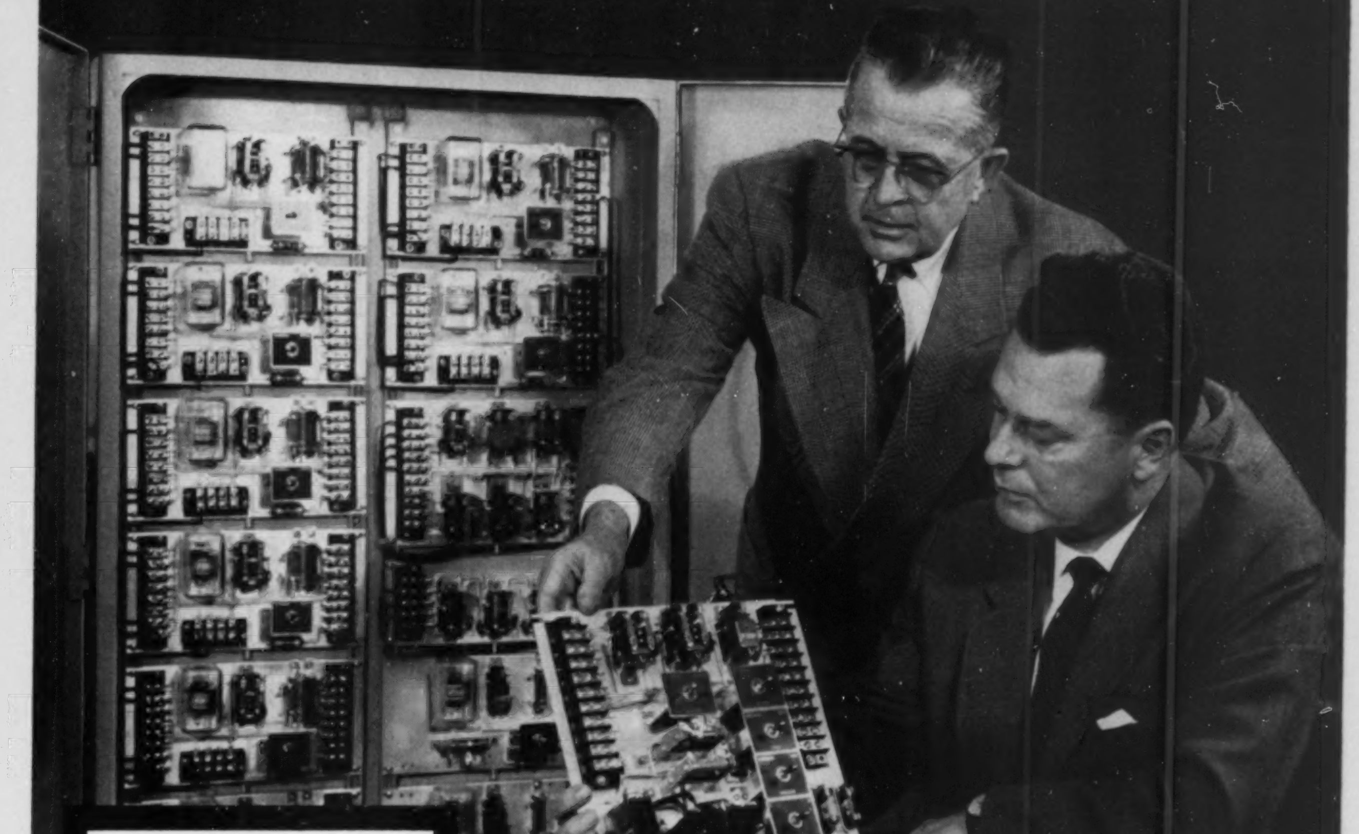
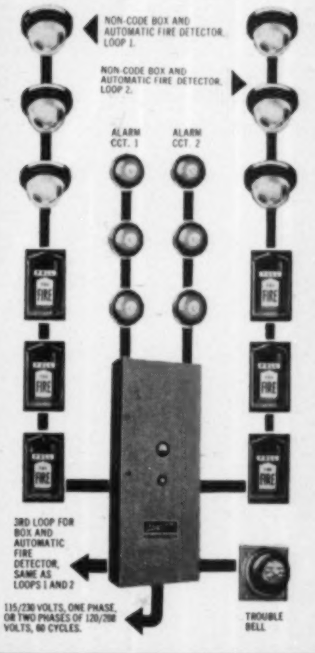


Typical installation
FLEXALARM Automatic
Fire Alarm System


NON-CODE BOX AND AUTOMATIC FIRE DETECTOR. LOOP 1.
NON-CODE BOX AND AUTOMATIC FIRE DETECTOR. LOOP 2.
ALARM CCT. 1
ALARM CCT. 2
FIRE
3RD LOOP FOR BOX AND AUTOMATIC FIRE DETECTOR, SAME AS LOOPS 1 AND 2
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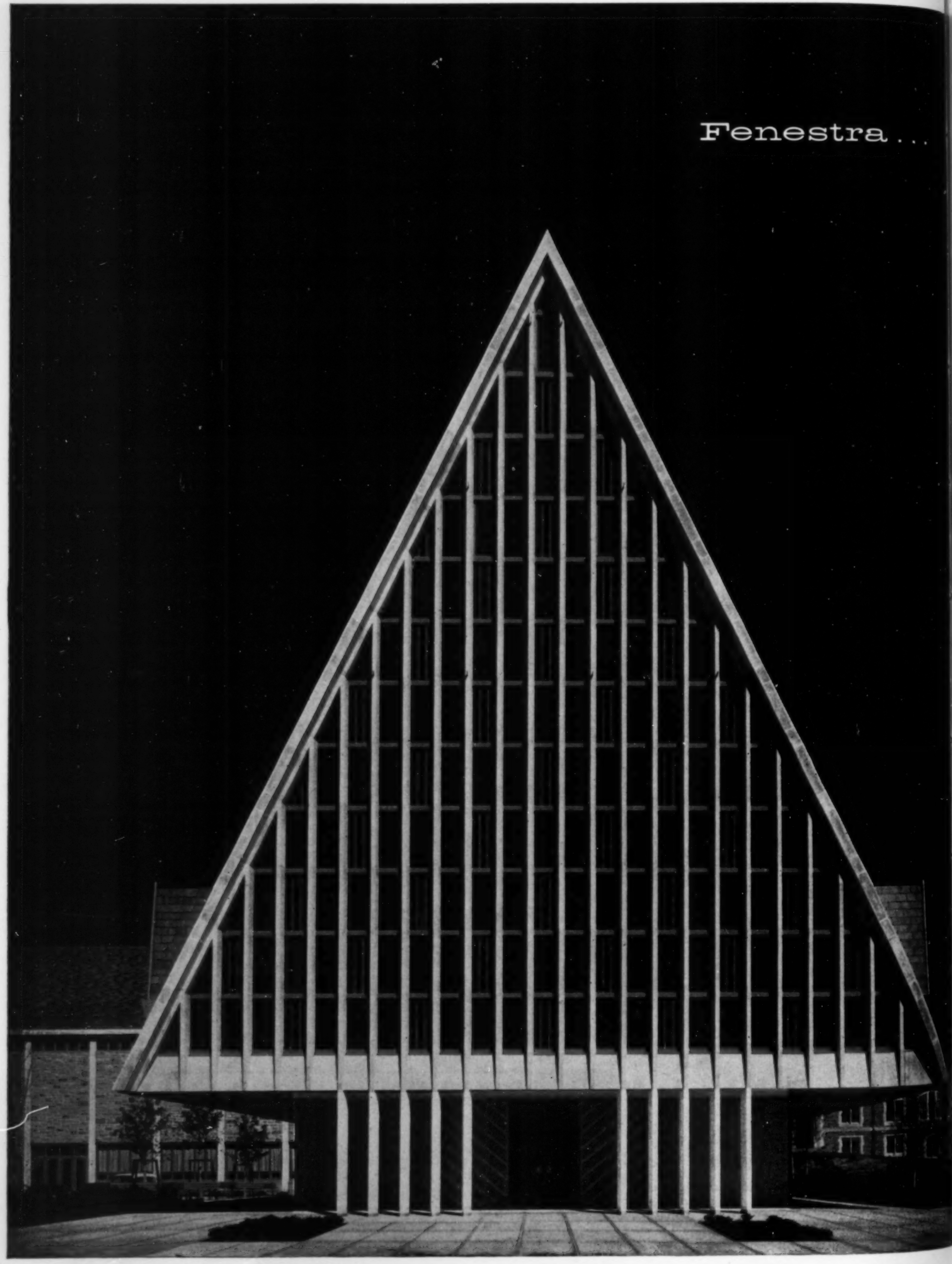

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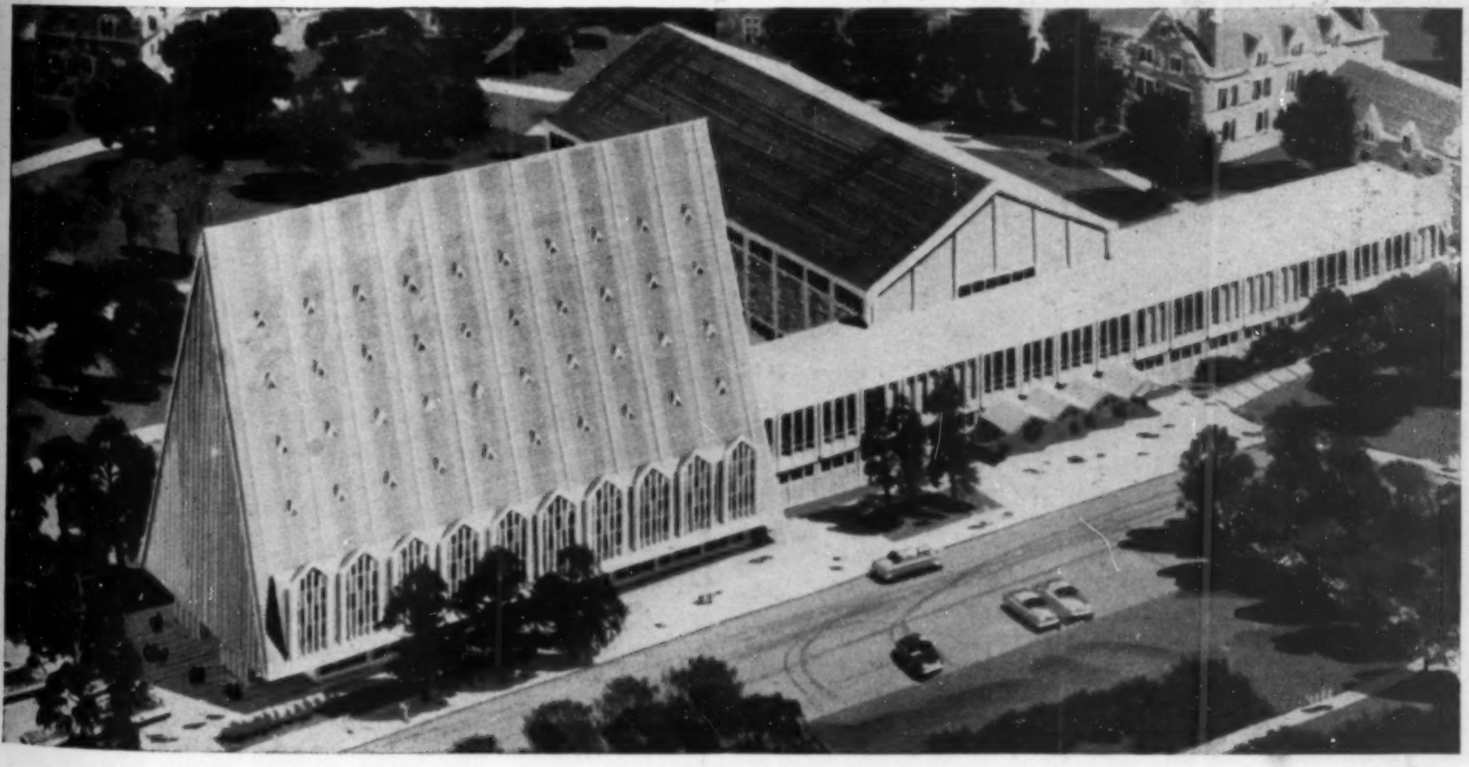
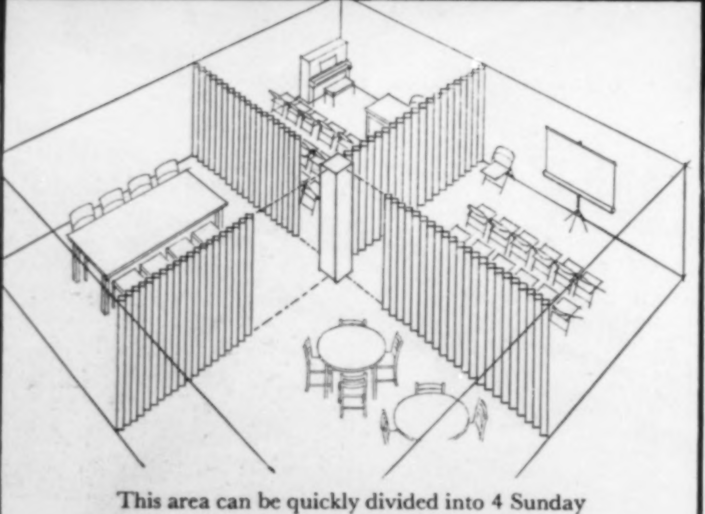
CURTAIN WALLS • BUILDING PANELS • DOORS • WINDOWS

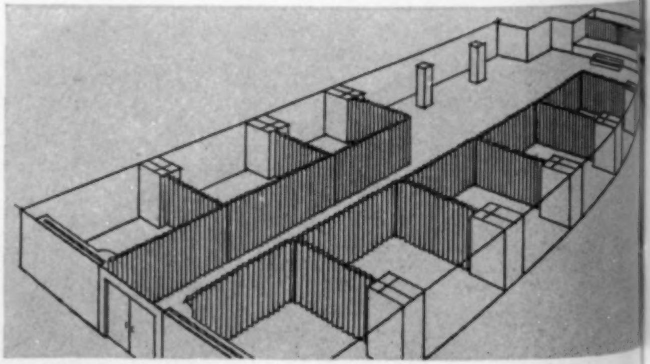
Fenestra Curtain Wall—Steel subframes with applied projected sash. Lodge Hall and Recreation Building. Masonic Homes, Elizabethtown, Pennsylvania.

Architects—Mitchell & Ritchey, Pittsburgh, Pa.
Contractor—The Pottiger Company, West Reading, Pa.

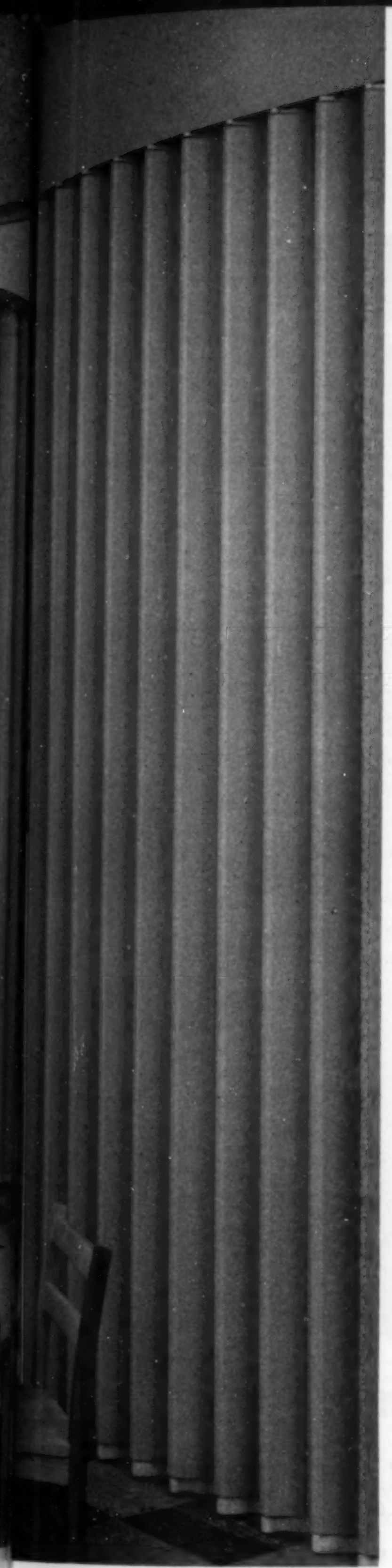




This area can be quickly divided into 4 Sunday School classrooms with Hufcor Accordion Partitions. Actual experience proves sound reduction is above requirements. Sweep strips top and bottom were used, but acoustical liners will never be needed.



This 34x100 ft. room was once a utility service area under the sanctuary. Hufcor Accordion Partitions with sweep strips top and bottom played an important part in making this a multipurpose room. In minutes the area can be changed from 8 classrooms and one assembly room to a meeting hall that will seat 1500 people.



Miss Alice Murdock, Director of Religious Education, Wilmette Parish Methodist Church, Wilmette, Illinois

"Our church was built for 1100 members. Now we have 1950. We selected Hufcor Accordion Doors to divide our newly remodeled youth center. We know they perform a surprisingly satisfactory job of sound reduction. We understand that should our noise problem increase we can add liners later without sending the doors back to the factory."

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You need "mass" to reduce sound. Hufcor gives you more mass than other vinyl accordion doors. The basic Hufcor 5-ply laminated cover construction results in 60 ounces of mass per sq. ft. compared to that of drape-type covers with 18.4 ounces. This in itself provides substantial sound reduction from one room to another. Costly liners are not needed for 9 out of 10 installations. Check your jobs now. Specify Hufcor Accordion Doors and Partitions and save.

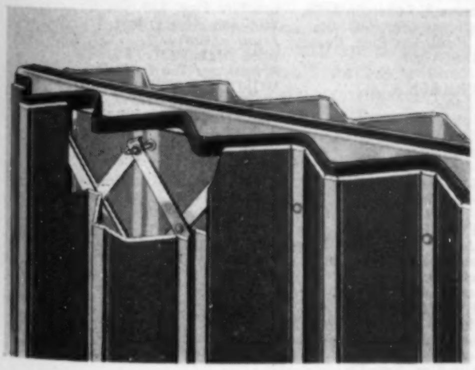
***OFFICIAL ACOUSTICAL RATING OF HUFCOR ACCORDION DOORS (db.)**

	ASTM Std. E90-55 (125—4000 cps.)	Industry Standard (350—4000 cps.)
Hufcor 183 (basic door, no sweeps)	17.2	18.3
Hufcor 228 (sweeps top & bottom, 1 side)	20.1	22.8
Hufcor 255 (sweeps; top 1 side, bottom 2 sides)	22.6	25.5
Hufcor 283 (Hufcor 255 with liners)	24.6	28.3

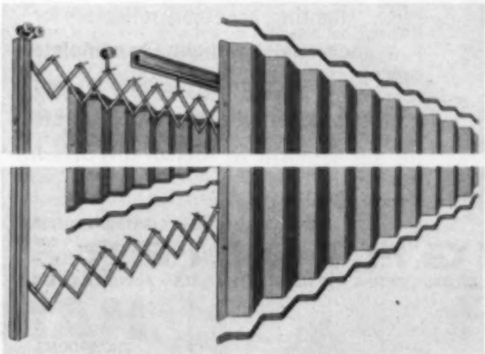
*Tests by Geiger & Hamme Laboratories, Ann Arbor, Michigan.

HOUGH

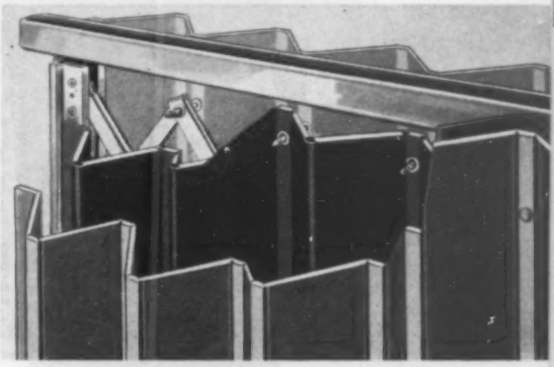
MANUFACTURING CORPORATION, Janesville, Wisconsin



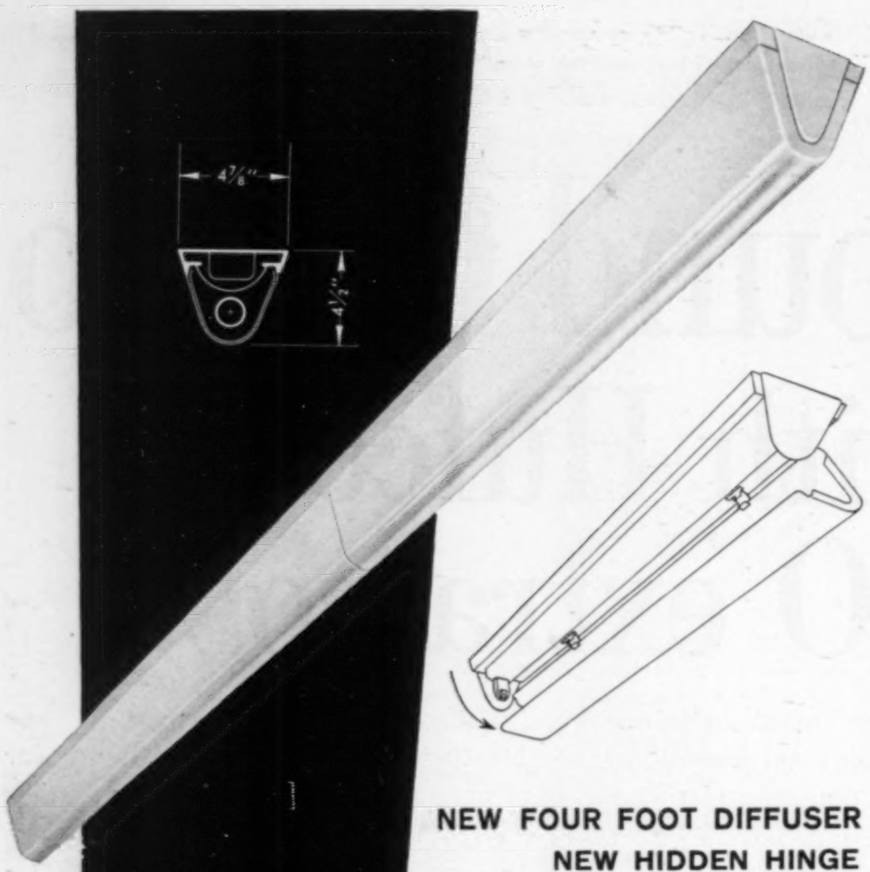
HUFCOR 228 Sweep Strips Top and Bottom, One Side. The basic Hufcor door provides superior resistance to sound transmission. By the addition of sweep strips, top and bottom, one side, the basic Hufcor standard, special and heavy-duty doors will satisfy 9 out of 10 noise reduction requirements.



HUFCOR 255 Sweep Strips Top One Side, Bottom Two Sides. This door takes the gamble out of the question, "Do we really need an acoustical accordion door?" Hufcor 255 has devices to support liners that can be added later on the job. No need to entail this extra expense unless it is proved by actual sound tests they are needed.



HUFCOR 283 Liner Both Sides, Sweep Strips Top One Side, Bottom Two Sides. Where advance acoustical studies prove that extra sound conditioning is necessary Hufcor 283 should be specified. This door is installed complete with liners made of laminated construction similar to the outer covers.



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for corridor lighting

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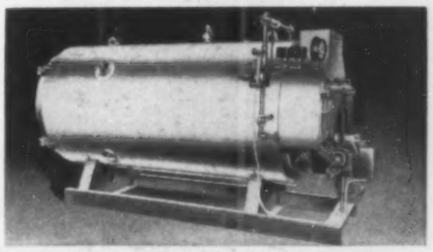

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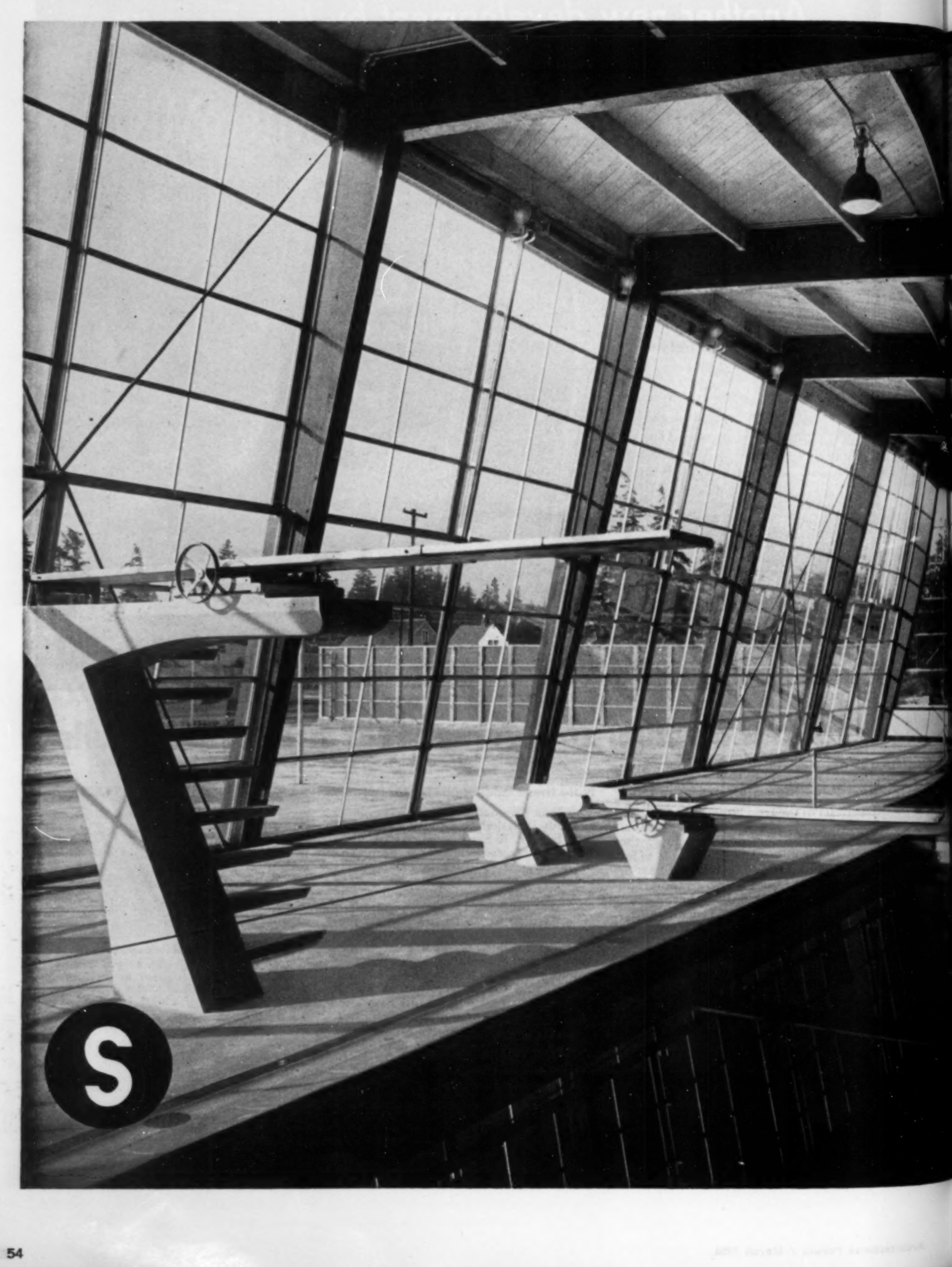

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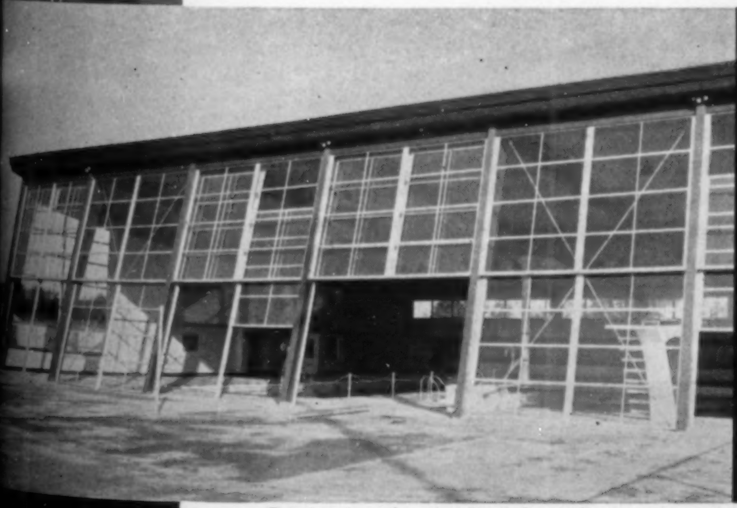

Exterior view of pool at North Bend, Oregon, shows the smart, modern lines created with The "OVERHEAD DOOR" Panoramic. Architect—Gordon Trapp; Engineers—Stevenson and Thompson; Contractor—A. T. Fox.

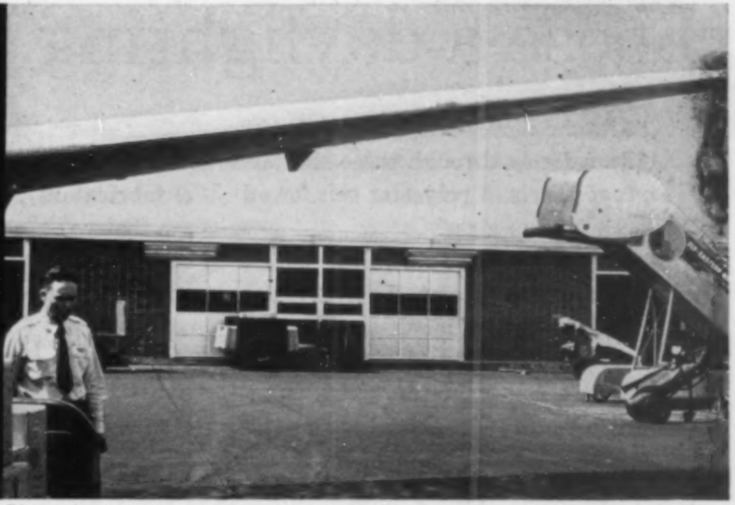

Photo above shows one of the many installations of The "OVERHEAD DOOR" Panoramic Aluminum Doors at Lee Terminal, Standiford Field, Louisville, Ky. Architects Arrasmith and Tyler utilized the attractive, lightweight Panoramic Aluminum Doors to combine modern beauty with fast, easy operation throughout the terminal.

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• Top: Colonial Williamsburg Motor House by Tom Lee • Center: Photo in Alcoa Care-free Home • Bottom: Office, Gateway Center, Pittsburgh

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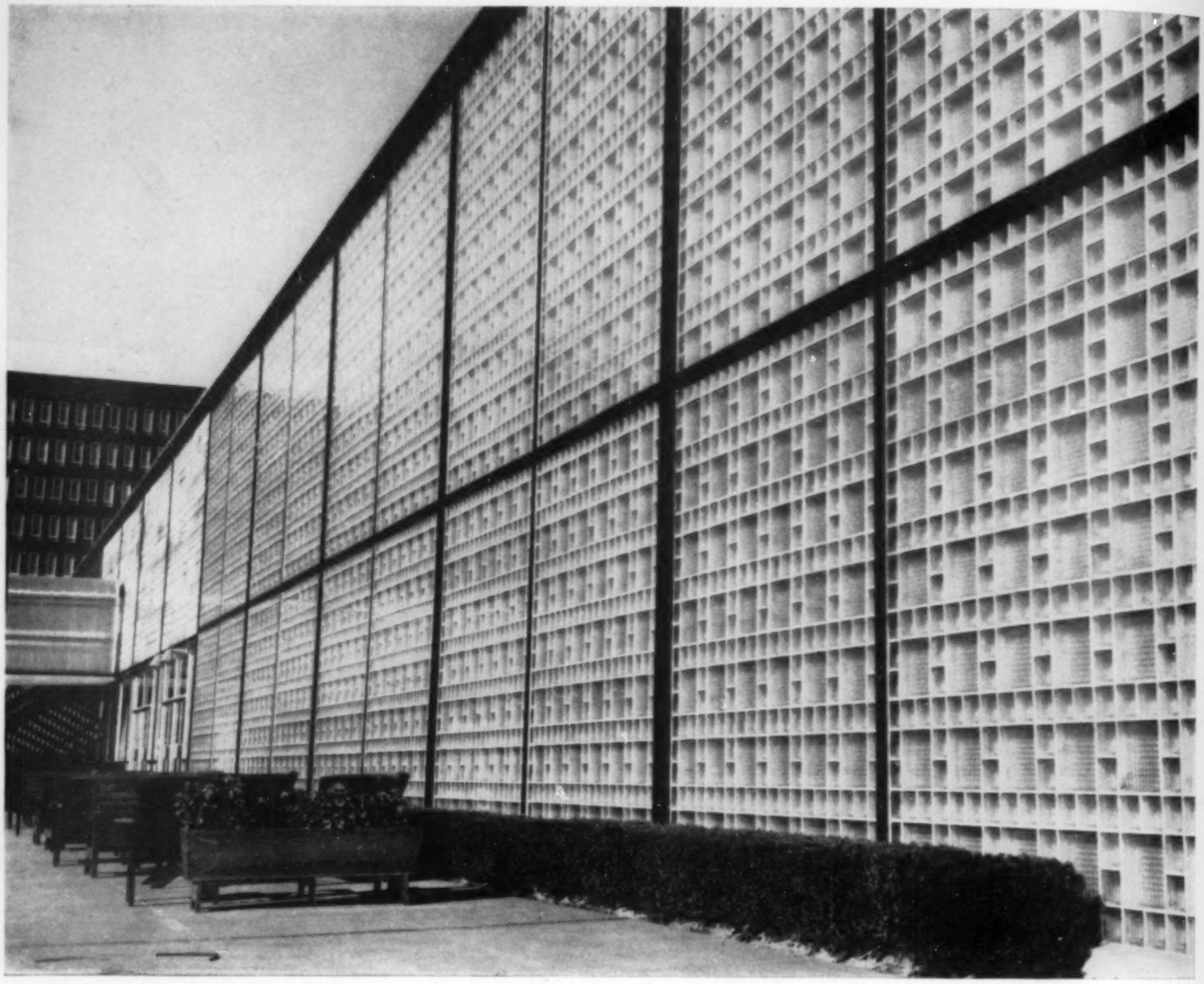

PC Glass Blocks in Curtain Wall at Corning Glass Center, Corning, New York.
Architects: Harrison & Abramovitz, A.I.A., New York.

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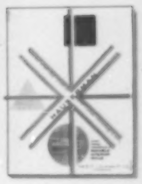

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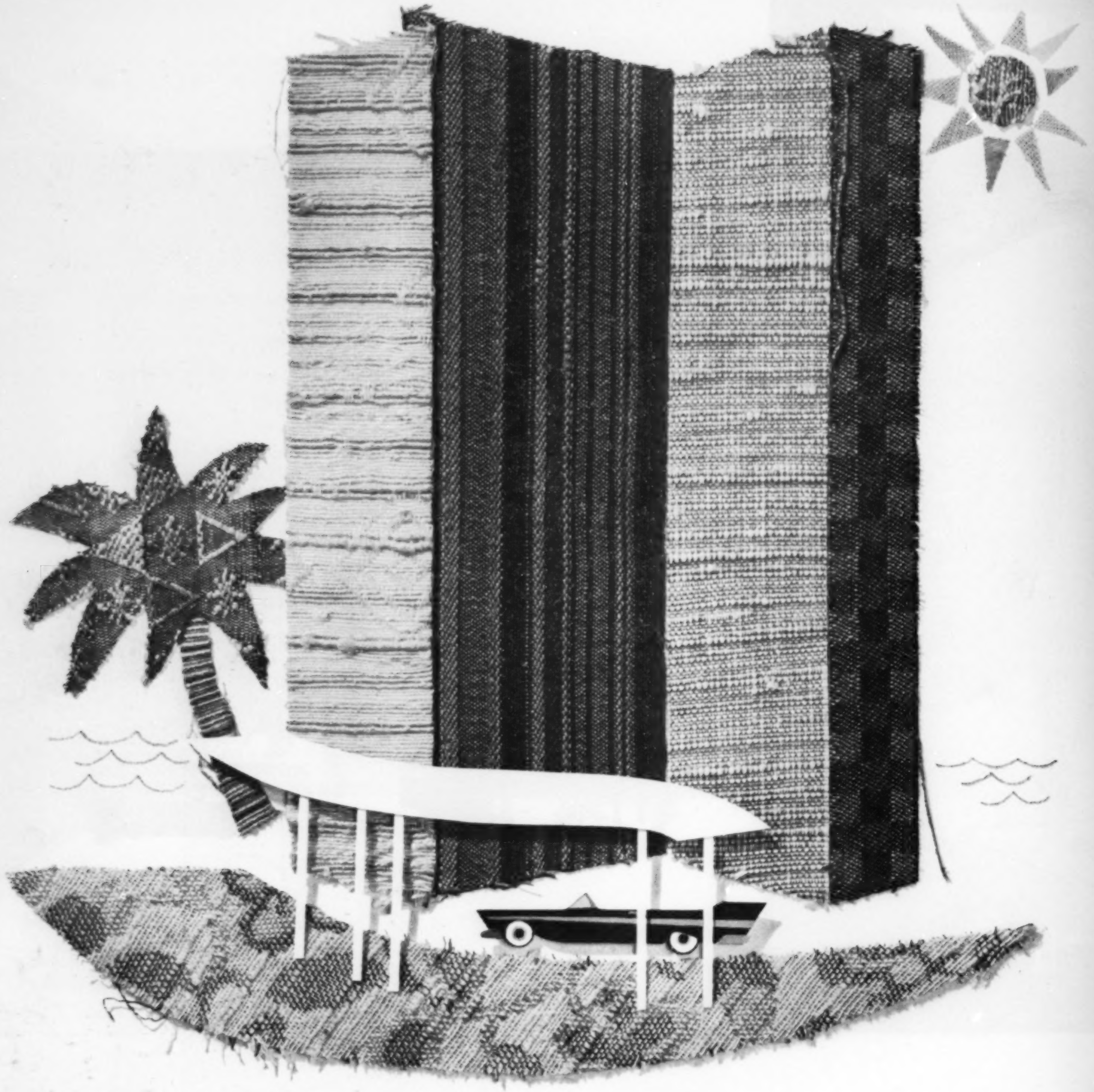

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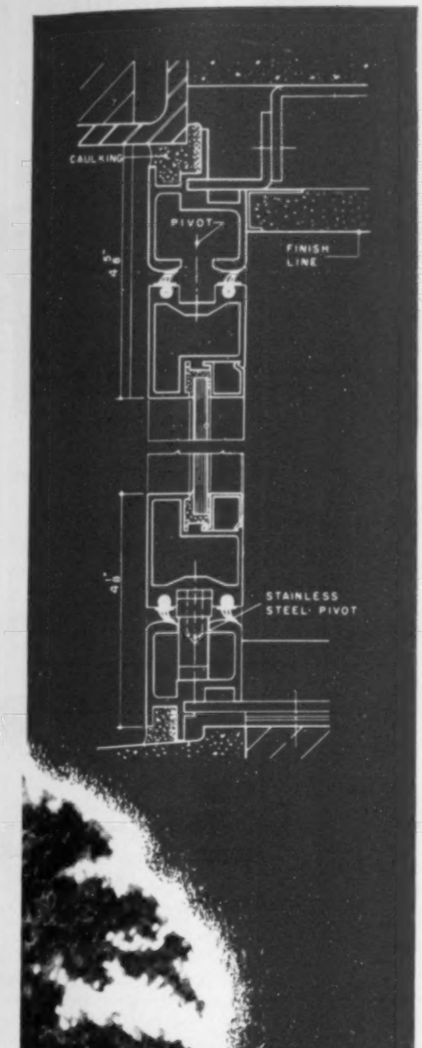

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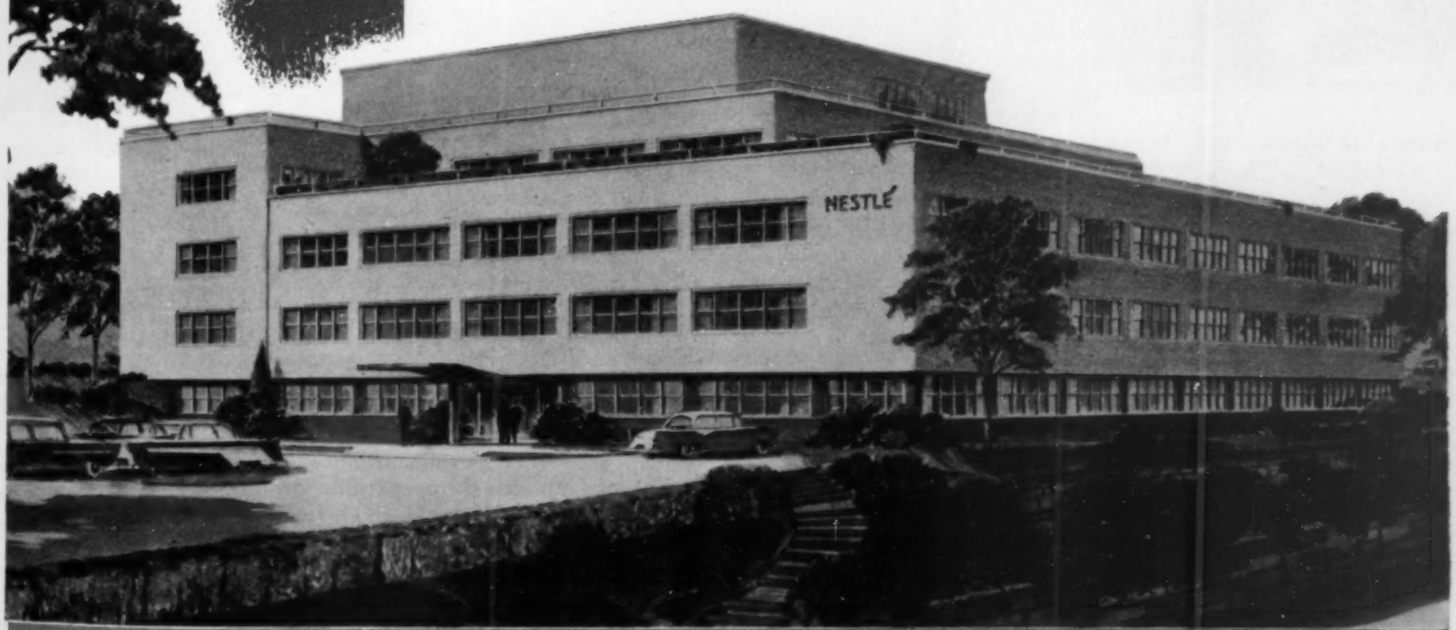

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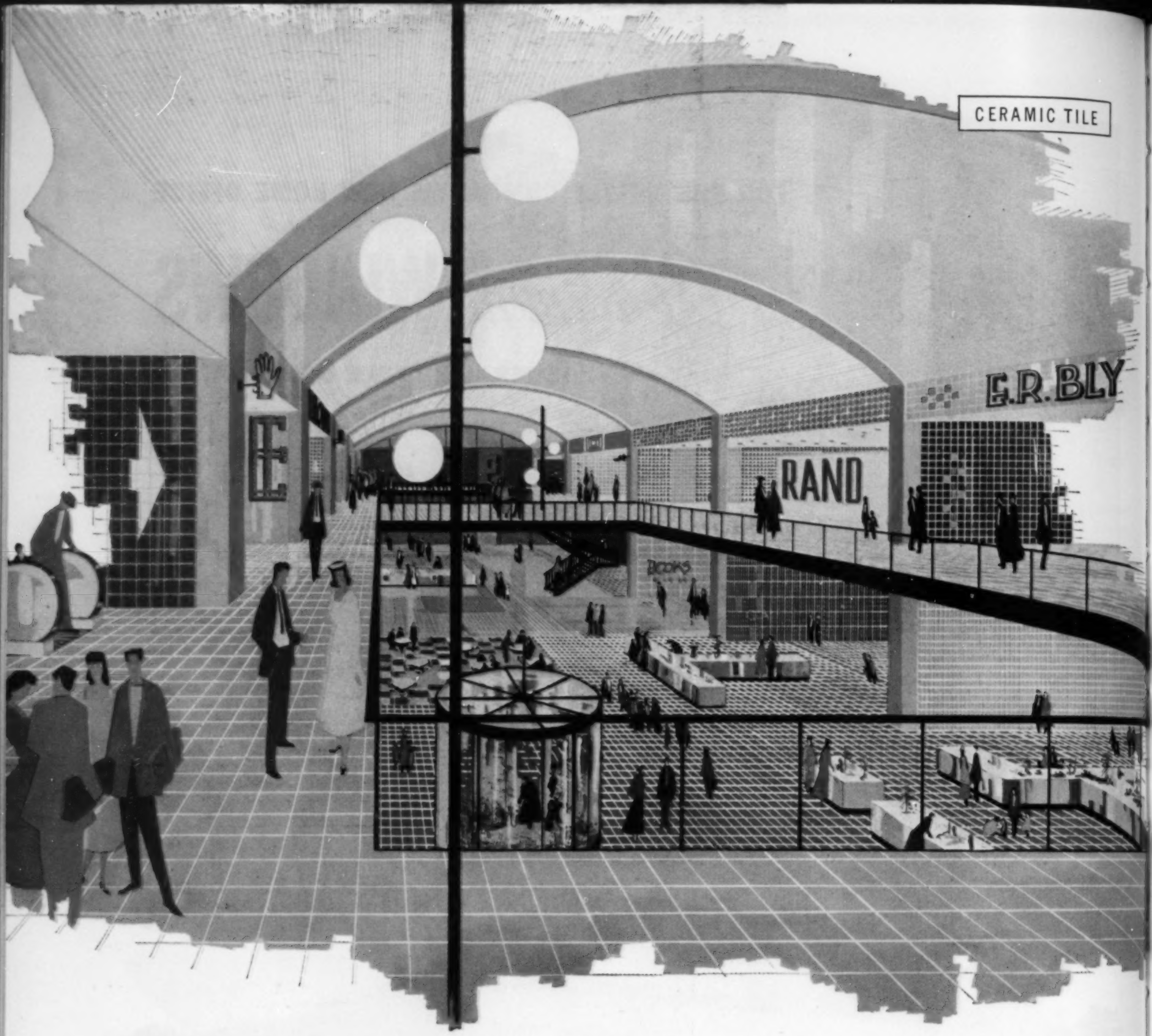

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. . . open land . . . open streets . . . open debate

OPEN LAND

Forum:

Congratulations on the very significant article on the problem of open land in the city (FORUM, Jan. 1958).

It very pointedly calls to the attention of both the professional and the nonprofessional the very grievous mistakes that are still being made in building our cities. Unless we act rapidly we will be in for serious problems, not only in the lack of esthetics and amenities of life, but also communities will not be able to provide for their elemental needs.

SOL ACKERMAN
Urban renewal coordinator
Milwaukee, Wis.

BULK ZONING

Forum:

Surely the work started here in New York by the planning commission soon after the end of World War II and now under continuing study has been useful as a guide and reference in developing the new bulk zoning controls proposed for Philadelphia and adapted in Chicago (FORUM, Feb. 1958).

The new ingredient at Chicago and Philadelphia is the premium idea. Marvelous—although the Chicago F.A.R. (floor-area-to-lot-area ratio) of 16 cannot allow too much premium above this without panicking the planners. Rockefeller Center, when we last figured it (1950), had a F.A.R. of 11.9.

Personally, I am unconvinced of the ghastly things that would happen to the central cities with higher densities. Vehicular and pedestrian movement would stop at some point as densities went up, but then we would use great ingenuity and spend masses of money to straighten *that* out. This would be progress, and everyone would be happy again. At least this is the pattern indicated by past experiences.

The element that principally makes for high land values in central areas is high bulk zoning. Where a low bulk ceiling is put on a city before high bulk develops, land values are automatically distributed more widely. It's the zoning that influences the real estate "economics" in the first place.

WILLIAM F. R. BALLARD
Ballard, Todd & Snibbe, architects
New York, N.Y.

Forum:

In the future, when high buildings will be grouped in superblocks, something like the extensible F.A.R. will be just the thing. On a newly built conventional street it should work well enough if the rules require strong deviations from the nominal building line so that you would really get a dramatic plan-in-depth and not a staggered wall. But for spot application to established commercial areas it is dubious both esthetically and trafficwise.

The Ziggurat wedding cake of 1916 had faults but it gave to New York a positive architectural character, a good thing that can only be done en masse. The streets in the stepped-back areas have become a kind of folk art having some of the esthetic values of the gabled Hansa towns.

And please don't set fashions that will make all our cities look alike. I tell foreign visitors: after New York, to go straight to Chicago—the difference is so dramatic. Then to Washington, where the horizontal lines prevail, and the expression, in general views of the city, is of power, dignity, and continuity, not of competitive novelty. With our wide streets and sidewalks and our many green spots we have less interest in handkerchief plazas and promiscuous high-risers.

ELBERTS PEETS, *site and city planner*
Washington, D.C.

REED'S CLASSICAL

Forum:

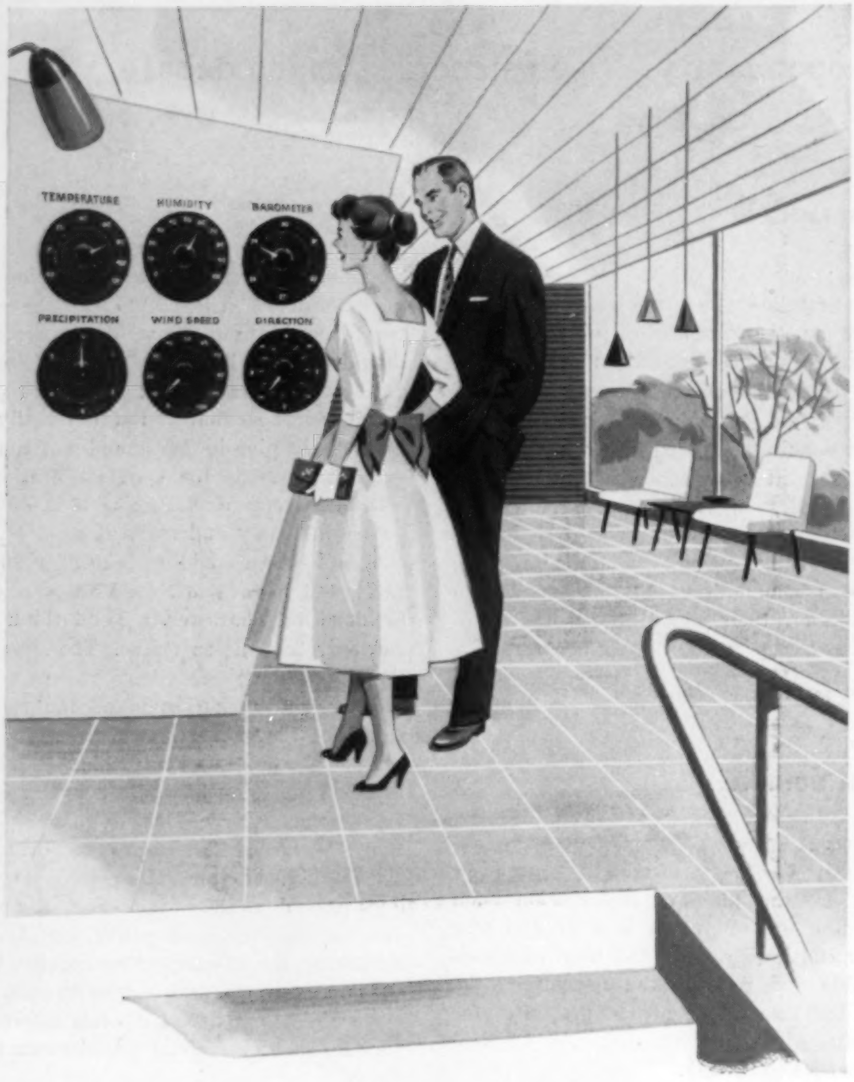
Concerned with trends in architectural fashion, FORUM often bewails the spread of the second-rate. Obviously this is inevitable when mediocrity today passes for the first-rate. Where can the crows find their peacock feathers?

While lamenting this spectable, your editorial voice was recently raised in agitation to complain that "a small group of fanatics has been getting some attention in general magazines—they advocate the overthrow of modern architecture altogether in behalf of just one revival which they favor, that of Roman Classical" (FORUM, Aug. 1957).

It is my pleasure to be a member of the "small group."

Our intention, by the way, is hardly an overthrow of the so-called modern but a going forward to the classical, a progress which may prove drastic for some. We

continued on page 60



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desire an architecture where all the arts have a place, from painting to wrought iron. Today's modern, both in argument and instructural methods, closes the door to the sister arts. We want an architecture which admits of a visual approach and not a structural, rational, or functional one. We want an architecture which welcomes the gold thread of our American heritage; I mean the classical tradition, from the Governor's Palace at Williamsburg to the National Gallery in Washington. It has inspired our greatest architecture in the past and will do so in the future. We want an architecture which is not afraid of the human form. The modern artist, be he architect, sculptor, or painter, is so frightened by the human form that he turns to esthetic vivisection. We want an architecture which will produce decorated lamp posts, triumphal arches with quadriga, rostral columns, equestrian statues set in arcaded squares, obelisks, all the luxury of a thicker detail now so absent. We want an architecture which is unafraid of incorporating the past in the future. We want an architecture which will admit public buildings where visual history can unfold. There will be niches for statues of our heroes, spaces framed by moldings for pictures of historical scenes, pediments containing figures evoking national grandeur.

In sum, we want an architecture of plenty—not of poverty.

HENRY HOPE REED JR.
New York, N.Y.

CONGRESS HALL DEBATE

Forum:

My criticism of the Berlin Congress Hall which you presented as a debate between me and Architect Hugh Stubbins (FORUM, Jan. 1958) contains a number of points of misunderstanding I would like to clear up.

I have always recognized the Raleigh Arena and Fred N. Severud as important contributors to the development of suspension construction in Germany, and I was delighted to hear that Stubbins and Severud were to build such a structure in Berlin.

In this debate the engineering and calculations of the Congress Hall were of no concern to me. The important question was how correct was it to choose a structural form to serve as a symbol and then to realize this with a different kind of structure only to maintain the same appearance.

I am also greatly concerned about Stubbins' words on monumentality: "Even though humanism is at the roots of modern architecture, man should not be deprived of the true and eternal qualities of contrast

continued on page 62

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NEW YORK'S NEWEST
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Conceived by the noted designer, William Pahlmann, A.I.D. and created in the grand tradition, the Forum derived its name from twelve heroic sized 17th century portraits of the original Caesars. The paintings form part of the exquisitely lighted decor of tile, cherrywood and bronze which distinguish the entrance, bar and dining rooms of this most unusual restaurant.

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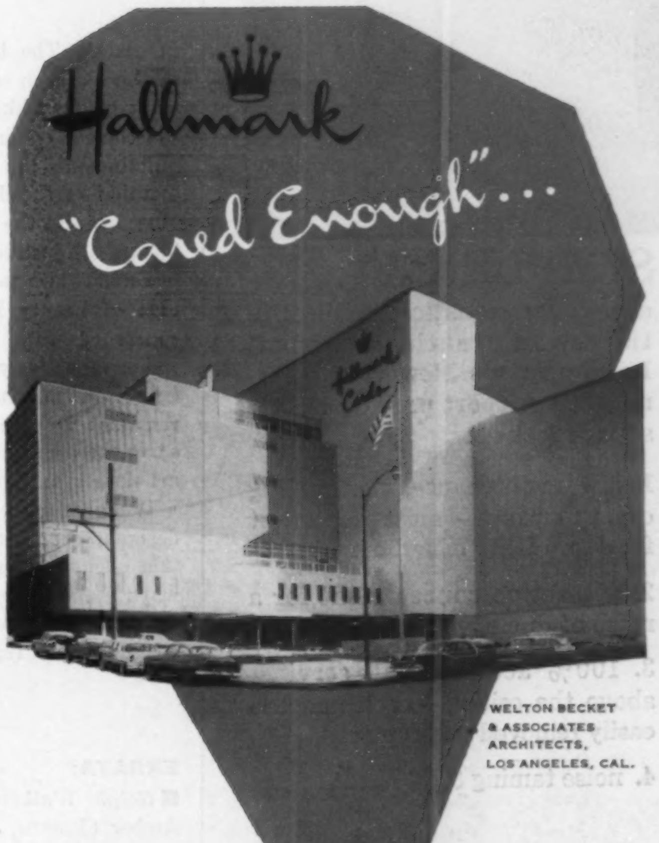

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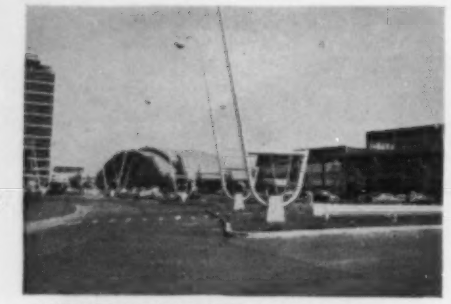

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in scale." The buildings built after 1933 in Germany, in contrast to historic pioneer work by men like Gropius and Mies, were sanctioned by similar words. Most public buildings in the U.S. and its banks with temple-like façades, the new University in Moscow, and the Stalin Allee in East Berlin are all justified by the same reasoning.

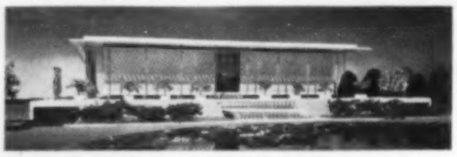
I don't dare to take issue with Stubbins' idea of beauty because I am too closely concerned with the design problems to judge objectively. The basis of my criticism is humanism. The unsolved question remains: Does each part of the building serve the organism as a whole? A work of art does exactly that.

When I spoke of the *one* solution the designer should try to find, I didn't mean that such could ever be found. It will always remain an ideal exposed to continuous changes. All good designs will be some distance from the ideal.

FREI OTTO, *architect*
Berlin-Zehlendorf, Germany

ERRATA:

■ *Ralph Walker's book,* The Fly in the Amber (FORUM, *Jan.* 1958), *was published by Aldus Printers Inc. (under the direction of President Frank L. Henahan), not by Henahan House, which published* Ralph Walker, Architect.—ED.



■ *The December* FORUM *carried an obsolete model photo of the Embassy project in New Delhi by Architect Edward D. Stone. Here is a photo of the revised model.*—ED.

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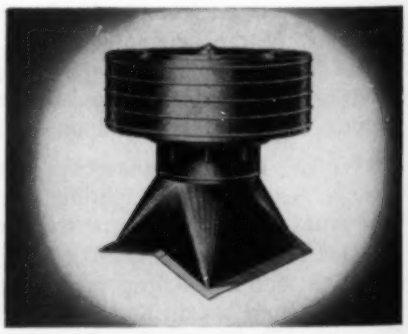

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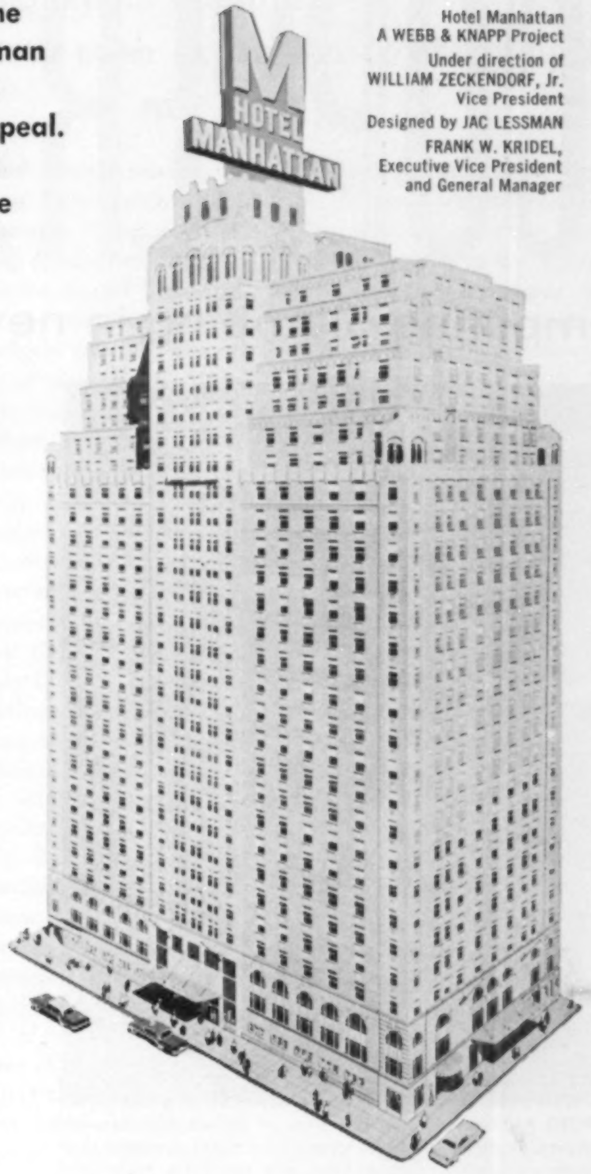

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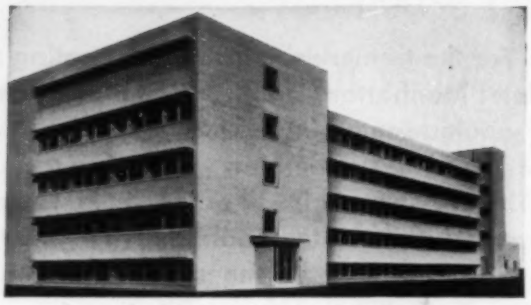
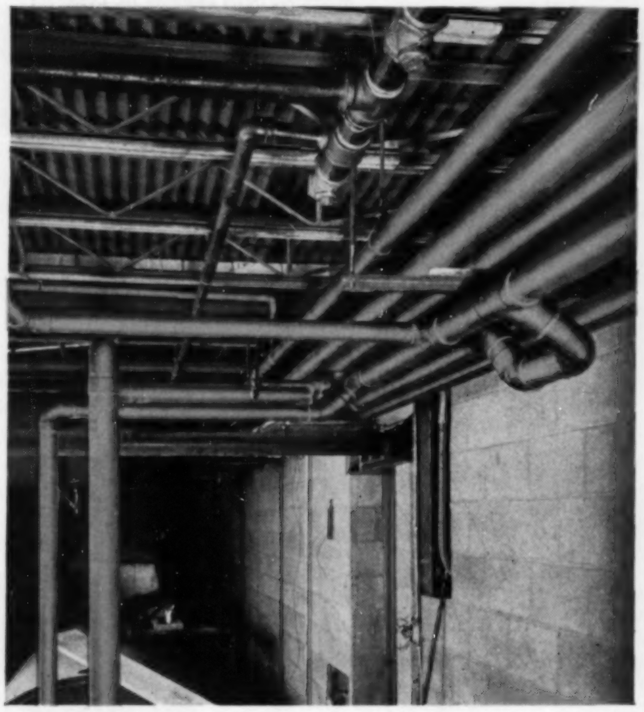


simplifies plumbing in new South Bend hospital

WATER PIPING and sanitary drainage lines of copper tube between floor and ceiling. The light weight of copper tube makes overhead work like this easier and faster. Copper tube with cast-brass solder-joint fittings was used throughout the 5-story building for the sanitary drainage system.



PARTIAL VIEW of compact copper tube installation in basement. Tight working space presents no problem with copper tube and solder-joint fittings. *Architect: John N. Marx, Chicago. General Contractor: Cornelius Pitt and Company, Chicago and South Bend. Mechanical Contractor: Allied Plumbing & Heating Co., South Bend.*

A TOTAL of 7000 feet of Anaconda Copper Drainage Tube, Type DWV, in sizes from 1¼″ to 6″, was used in the sanitary drainage system of the new South Bend, Indiana, Osteopathic Hospital. In addition, 25,000 feet of Anaconda Type L copper tube, in sizes from ½″ to 4″, was used for the hot and cold water supply lines.

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Greenfield resigns as head of Philadelphia Planning Commission to push expansion of shopping centers

LIFE: GORDON PARKS

GREENFIELD

Albert M. Greenfield, realtor-retailer, resigned as chairman of Philadelphia's Planning Commission because "The combined load of the planning commission and personal business is just too much." Greenfield, who is chairman of the board of Bankers Securities Corp., which controls one of the largest chains of department stores in the US, tried to resign a year ago, but Mayor **Richardson Dilworth** refused his resignation. At that time, Greenfield had stated he would only stay another year, but just ten days before he announced his resignation, he had indicated that he might continue on the planning commission.

What changed Greenfield's mind was the acquisition of United Stores Corp. by his own Bankers Security Corp. United's holdings include the McCrory, McClellan, and Cassels United Stores, whose sales amount to around $175 million a year. The United purchase raised the total sales of Greenfield's expanding retailing empire to nearly $600 million annually. Kingpin of this empire is City Stores which includes the Lit's chain in Philadelphia and City Stores' subsidiary, City Specialty Stores (Franklin Simon and Oppenheim Collins), which have combined sales of over $300 million a year.

Greenfield, who less than two weeks before his resignation had said, "The greatest challenge in America today is replanning and redeveloping great American cities," will now concentrate on the development of shopping centers. After nearly 50 years as a leading figure in real estate—his company is reportedly one of the largest realty firms in the nation—the restless 70-year-old Greenfield now calls himself a retailer. With his nationwide chain of department and specialty stores, plus his vast real estate background, Greenfield figures that he can offer a shopping center developer more help than he can get anywhere else, in terms of stores, planning, and all-round experience in development.

Even though he only served for two years on the planning commission, Greenfield made a lasting impression on that organization. For one thing, he brought his powerful reputation to bear on many municipal tangles, and for the first time made the commission a force to be reckoned with in municipal power politics. As one Philadelphia planner says, "He did an excellent job of increasing the effectiveness of the planning commission in the community and achieved for the commission a new respect from everyone, particularly politicians."

The new chairman of the commission is **G. Holmes Perkins**, dean of the School of Fine Arts and chairman of the Department of Architecture at the University of Pennsylvania. The commission vacancy created by Greenfield's resignation will be filled by **William F. Kelly**, president of the First Pennsylvania Banking & Trust Co.

CAMPUS PLAN SQUABBLE

LIFE: YALE JOEL

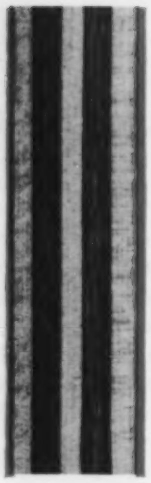
CARLSON

The State University of New York is not one school but a grab bag of 42 schools and divisions presently scattered throughout the state. In New York political and educational circles the University's future is a subject of acrimonious debate. Some favor an integrated central campus, while others believe that the present facilities should just be maintained and expanded. A few weeks ago, the dispute flared to its hottest with the resignation of **Dr. William S. Carlson** as head of the University. Dr. Carlson, who has been president since early 1952, resigned after a bitter squabble with university trustees over a special report prepared by **Dr. Theodore C. Blegen** of the University of Minnesota, advocating a central campus. Dr. Carlson came out in favor of Blegen's report, while the trustees, in a meeting late last year, unanimously rejected the idea. With Dr. Carlson's resignation, it now looks as if the $250 million that New York voters approved for expansion of the state university will be used to enlarge the present scattered facilities, rather than to build a central campus.

SHIFTS AT FHA

The Federal Housing Administration experienced an even heavier-than-usual turnover of top personnel in recent weeks. First FHA General Counsel **Pierce J.**

continued on page 67



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Gerety resigned after only nine months in office. Gerety, 43, wants to return to private practice in New York and Connecticut. His successor is **George P. Bickford**, 56, a Cleveland attorney specializing in tax and corporate law.

Another resignation that crossed FHA Commissioner **Norman Mason**'s desk was that of **William F. Hoffman Jr.**, who, as director of FHA's Mortgage Insurance Division, has been in charge of most FHA rental housing programs. Hoffman has had the job for about a year, now wants to return to his private investment interests in Newark, N.J. He was the second man to head the rental housing division since **Clyde Powell** quit under fire during the "608 scandals" in 1954. **Harold W. Prehn**, former director of FHA's insuring office in Springfield, Ill., will be acting director of the Mortgage Insurance Division.

Meanwhile, **Charles E. Sigety**, a former top figure at FHA, turned up in the news a few weeks ago when he was appointed first assistant attorney general for the state of New York. Sigety was fired from his job as Deputy Commissioner of FHA after he reportedly went fishing for Commissioner Mason's job (FORUM, Oct. 1957), by proposing Mason for the top job in the whole federal housing complex, that of Housing & Home Finance Administrator. **Albert M. Cole**, incumbent at HHFA, successfully squelched Sigety's move.

ELECTIONS

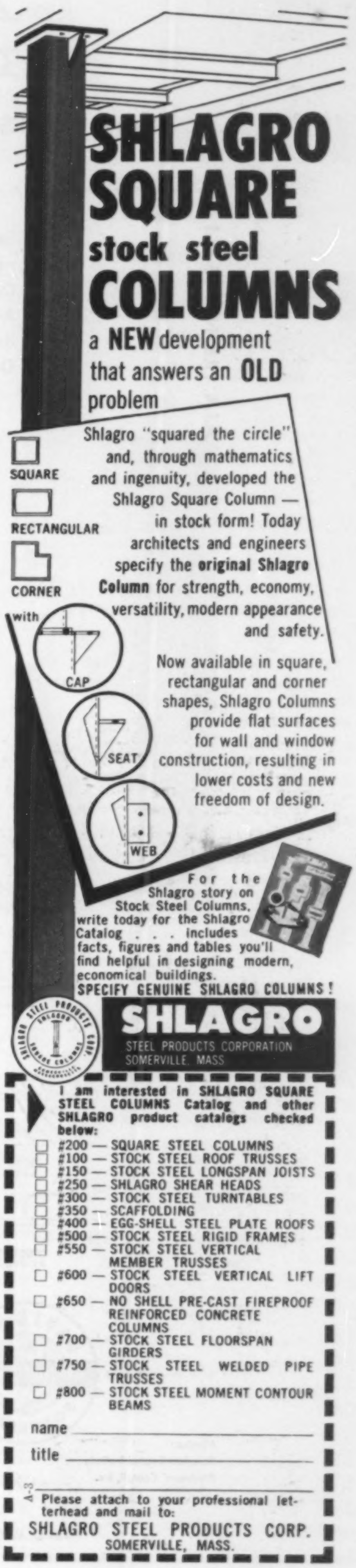
LIFE: ALFRED EISENSTAEDT

Stephen D. Bechtel, president of Bechtel Corp., one of the nation's largest building corporations, has been elected chairman of the Business Advisory Council. The council is a group of businessmen who advise the Secretary of Commerce on economic and business affairs. Bechtel, who had been a member of the executive committee of BAC, succeeds **Eugene Holman**, chairman of the board of Standard Oil Co. (N.J.). **Ralph J. Cordiner**, president of General Electric Co., was elected vice chairman. . . . **Gordon I. Kyle**, who reportedly has appraised $10 billion worth of real estate during his 40-year career, has been elected president of Cruikshank Co., New York's oldest real estate firm. Kyle succeeds **Russell V. Cruikshank**, who will be chairman. . . . **Philip C. Johnson** has been elected a trustee of New York's Museum of Modern Art. Johnson was the first director of the museum's Department of Architecture in 1932 and has been closely associated with it since. . . . **Martin L. Beck**, onetime assistant professor of architecture at Princeton and now a member of the New York architectural firm of Kelly & Gruzen, has been appointed by the governor to the New Jersey State Board of Architects.

DEATHS

John Knox Shear, 40, editor of *Architectural Record*, died at the Princeton, N.J. hospital as the result of a short illness. Shear had been editor of the magazine since November 1954. Before that, he headed the Department of Architecture at the Carnegie Institute of Technology in Pittsburgh, and practiced with his own firm of Shear, Spagnuolo & Taylor. Shear received his bachelor's and master's degrees from Carnegie Tech and a MFA in architecture from Princeton. He was a member of AIA and the Architectural League of New York.

T. H. Maenner, former president of the National Association of Real Estate Boards and onetime Nebraska Republican National Committeeman, died in Omaha at 66. He was president of T. H. Maenner Real Estate Co. in Omaha. A long-time foe of federal housing programs, and particularly of rent controls after World War II, Maenner was elected head of NAREB in 1949. . . . **Albert B. Ashforth Jr.**, former vice president and director of Albert B. Ashforth, Inc., large New York real estate brokerage company, died in Manhattan at 52. Besides being an officer in the company founded by his father, Ashforth had been a trustee of Title Guarantee & Trust Co. and former director of the National Committee on Housing. Last year, he acted as broker in the sale of the Graybar Building to Webb & Knapp. . . . **Charles O. Heydt**, once real estate adviser to John D. Rockefeller Jr. and prominent figure in both the building of Rockefeller Center and the restoration of Williamsburg, Va., died in Glen Ridge, N.J. at the age of 81. Heydt, who managed most of Rockefeller's dealings in real estate, building and housing, until his retirement in 1941, started out as a stenographer for John D. Sr. in 1897.



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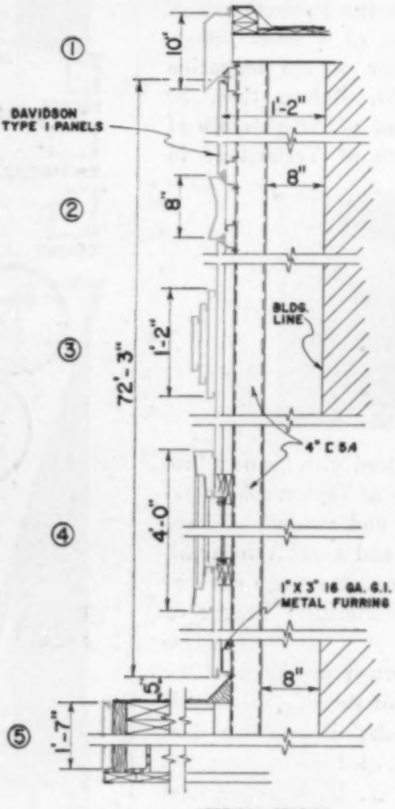
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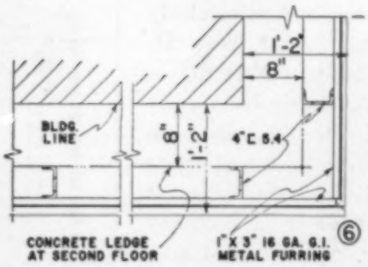
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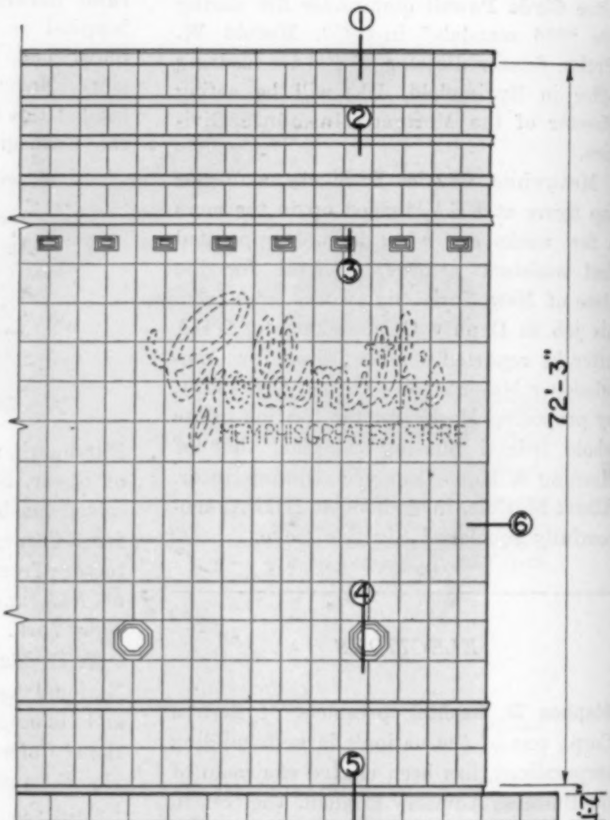
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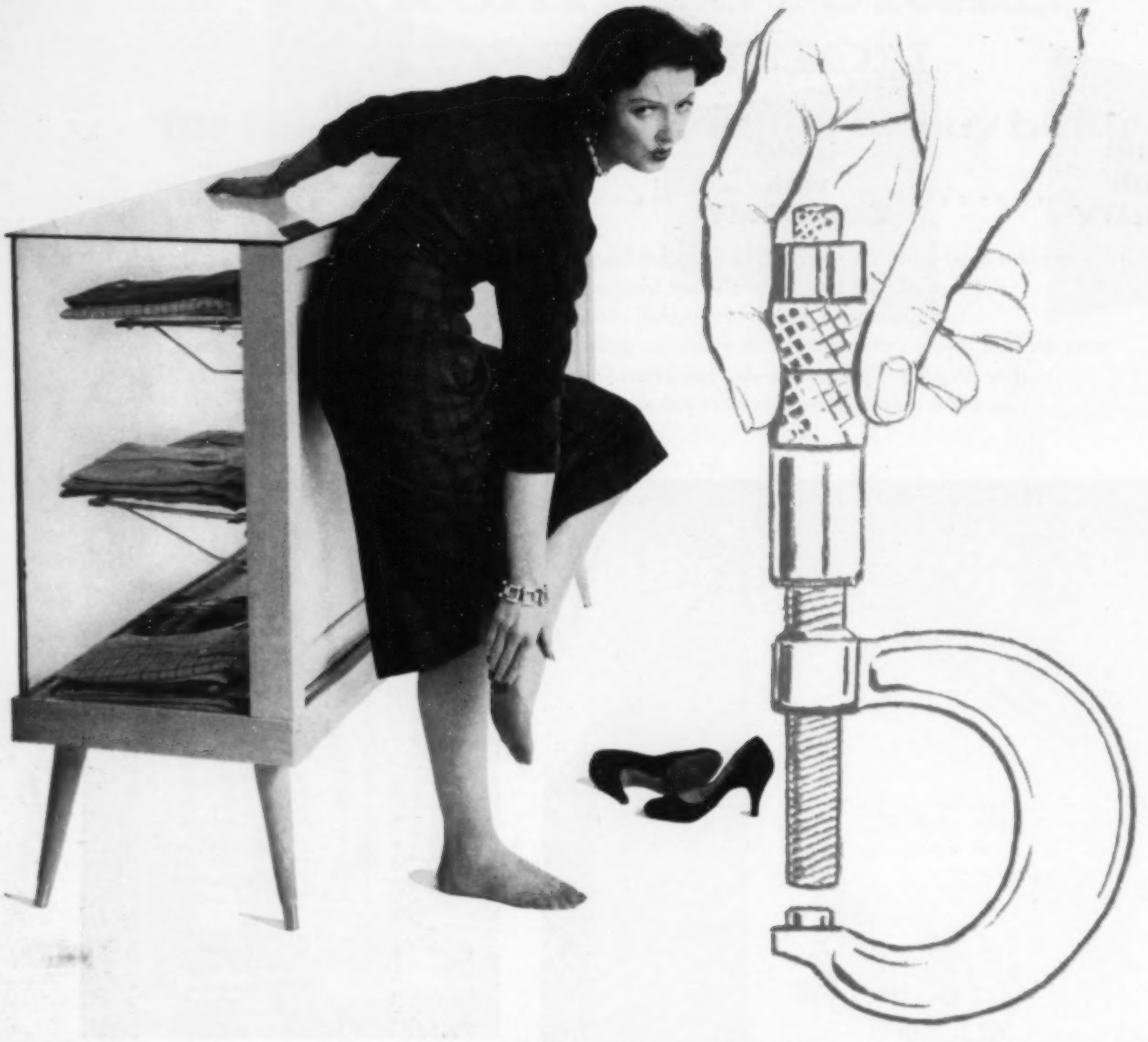

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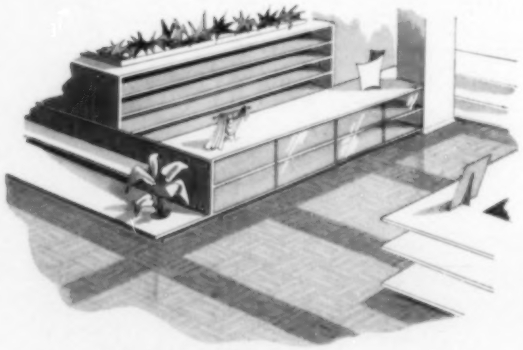

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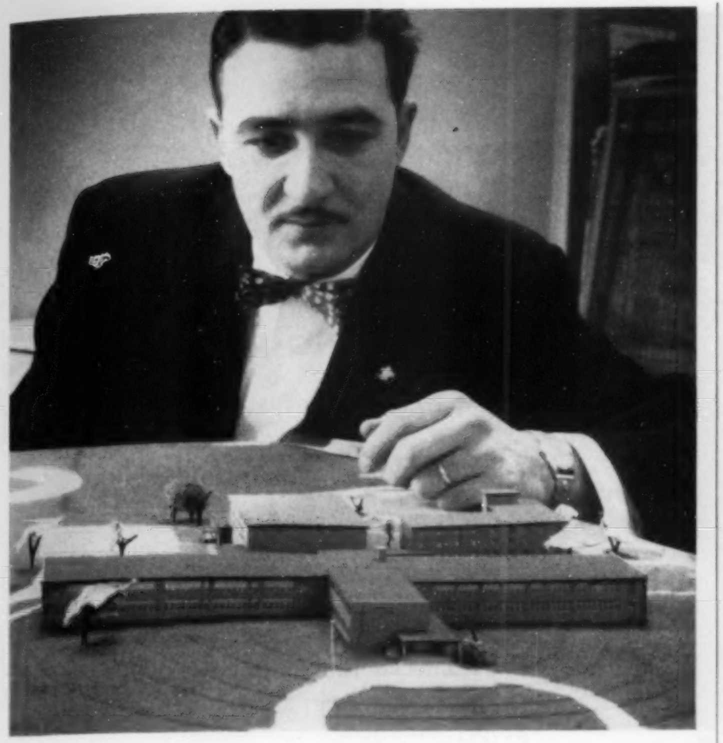

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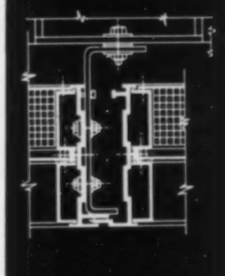

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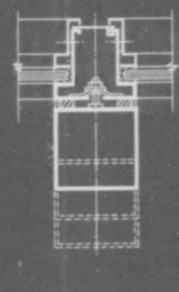

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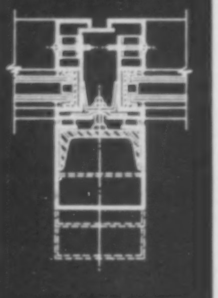

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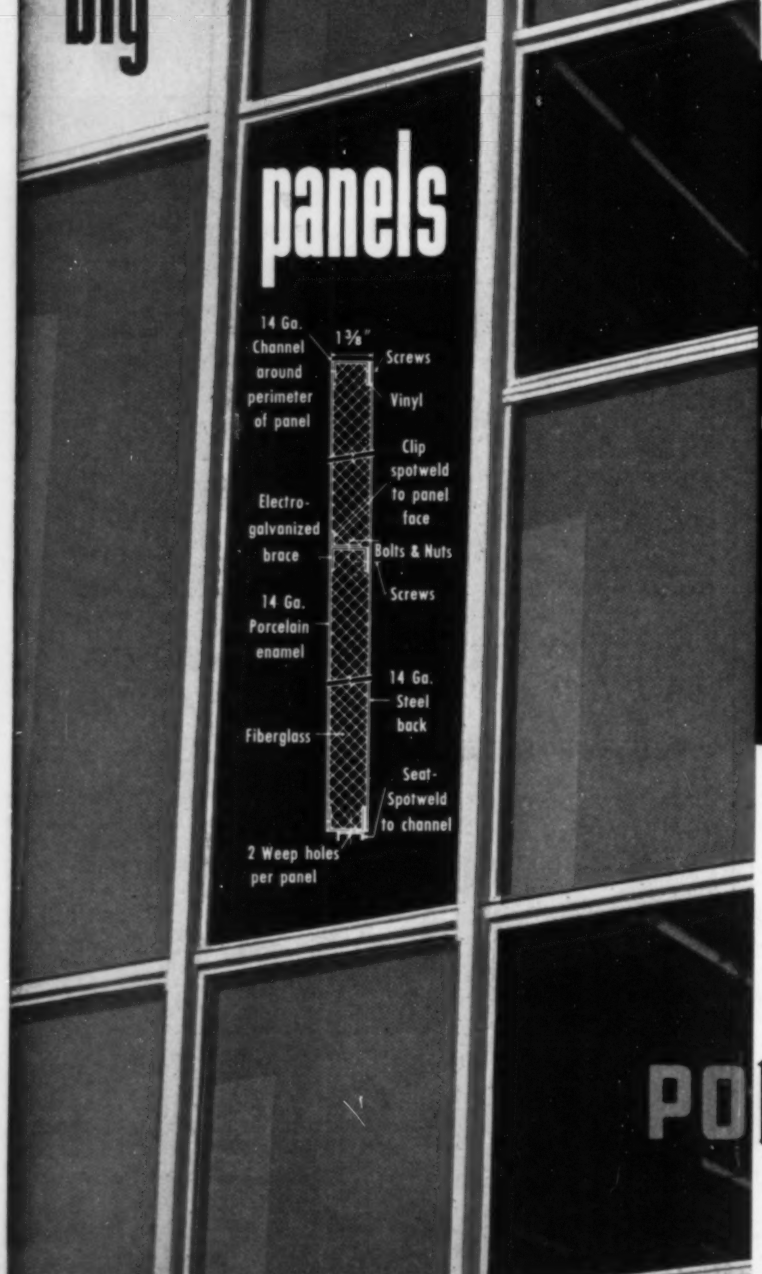
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Vinyl
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Screws
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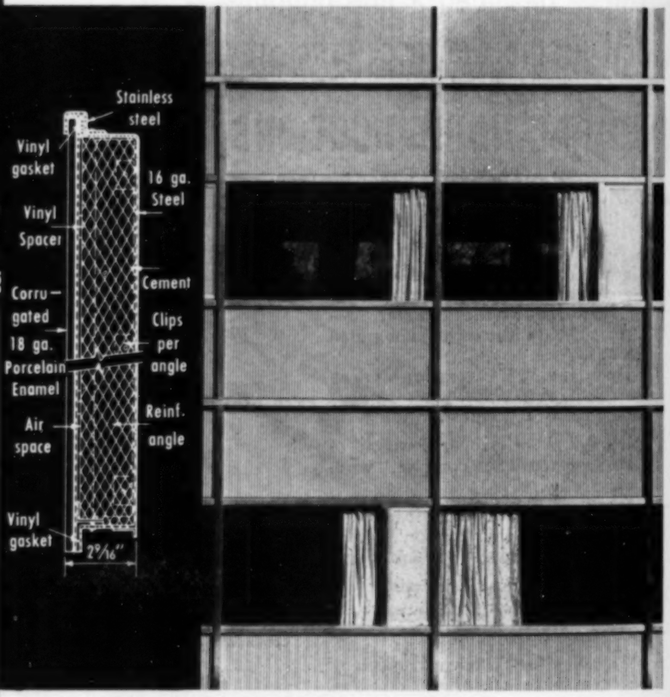
14 Ga. Steel back
Fiberglass
Seat-Spotweld to channel
2 Weep holes per panel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16 ga. Steel
Vinyl Spacer
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Editorial

Renewal is for small cities, too

Bigness brings with it so many problems of its own that they are likely to monopolize discussion. Thus, in all the recent talk of cities and their problems, the emphasis has been on metropolitan centers and on huge projects. But the ACTION committee, which deals with urban renewal, points out that most of the cities from which renewal programs have been reported are what would be called "small" cities. And in the discussion of the "central business district" and its problems, at the annual convention of the National Retail Merchants Association, more than half the audience declared that they came from cities which could not be called "metropolitan."

A good many of the renewal problems in cities of small or medium size are less formidable than those in the metropolitan centers but one special problem arises: the most lucrative jobs of redevelopment in town tend to fall to outsiders. There exists a small group of builders with headquarters in metropolitan centers who specialize in the redevelopment game, and these firms are likely to bid on any jobs that turn up anywhere across the country. They do their jobs with practiced skill, and they tend to look so formidable to smaller local concerns that local competition is discouraged from the outset.

This need not be so. Local interests have only to heed Ben Franklin's old homely injunction, "United we stand, divided we fall." They must pool their resources and make a determined effort jointly.

But often the local groups are apathetic. In the city of New Haven, for example, Mayor Richard Lee reports that not until last November was he directly approached by local architects for information on the vast New Haven redevelopment program, which had already cut a wide swath of demolition through the city center and had served the mayor as his chief plank in a major political campaign. Questioned about this, individual architects remarked that they were sure So-and-So (the largest local firm) had picked up whatever jobs the New York firms had left lying. Interestingly enough, one of the plums later fell to a Boston architect whose office is no bigger than the average in New Haven.

A record of more energetic local enterprise has been made in Kansas City on a teamwork basis. There the members of the local chapter of the

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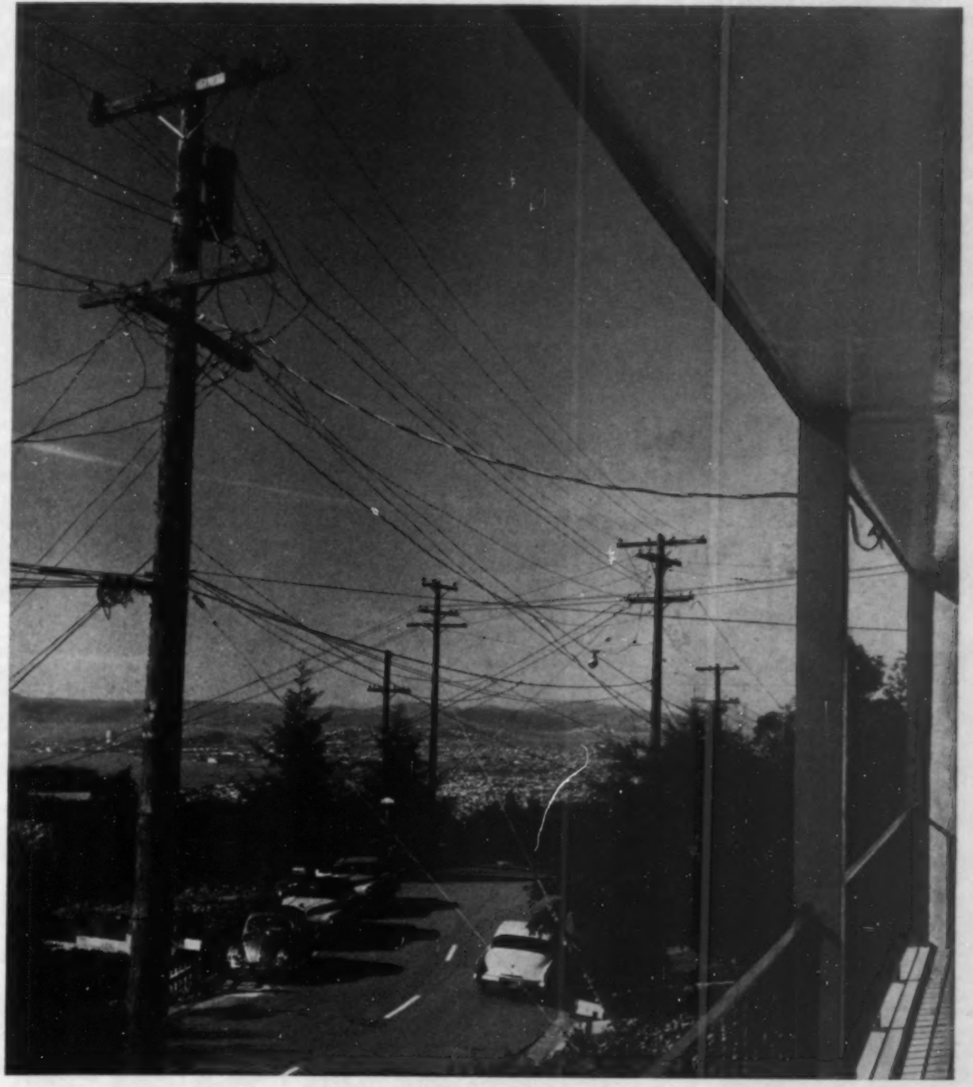
AIA combined forces under the leadership of President Frank Slezak to produce an impressive model and poster display showing a proposed method of handling the central business district. The architects have had all possible help from Phil Geissal, chief planning engineer, from the businessmen's Downtown Committee, and from other civic organizations. As redevelopment work ensues, the local architects should be well prepared to take it on along with the local business community. And nobody will be much outraged if such local groups are given the breaks in awarding of projects, for it is they who have done the groundwork.

Keep it clean

A regrettable side activity in the realm of city redevelopment has become disturbingly persistent. In recent months, even the most responsible and solvent of redevelopment builders have not been safe against rumors, skillfully planted, that they have suffered foreclosures which never happened; and even the most virtuous of city officials have not been safe against rumors, also skillfully planted, that they have engaged in favoritism and corruption —again nonexistent.

In an activity that takes in so many people, there are bound to be a few who act below the highest standard, and the more publicly they are criticized, the better. But backstairs whispering about prominent persons is a different matter. The active redevelopers are so few they can be counted on your fingers; everybody is smeared when one is smeared. And public officials of the high caliber needed are not so numerous that the cities can afford to have them withdraw in disgust. We lack only civil tongues and clean competition. Let's have both.

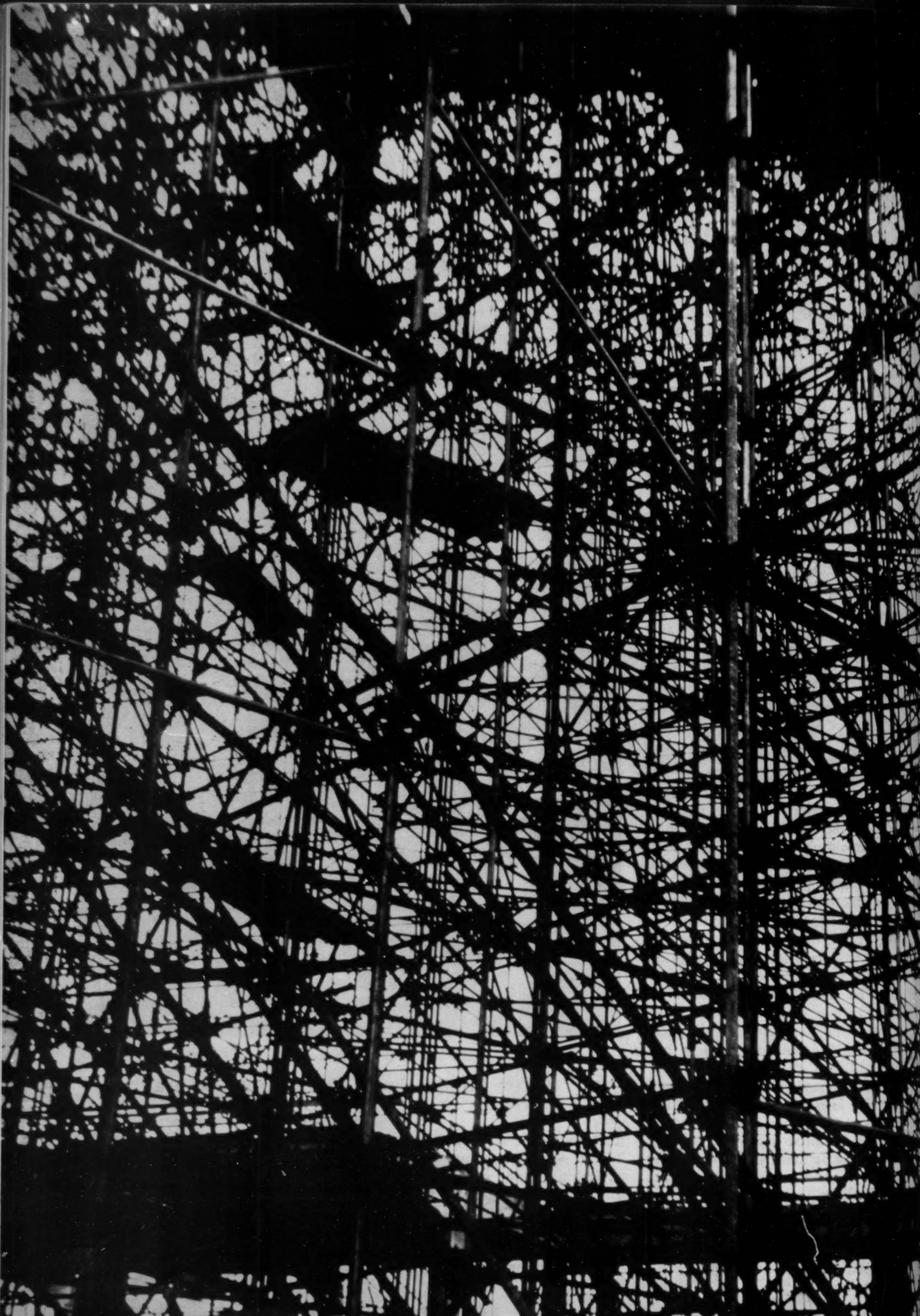
RON PARTRIDGE



Wire blight—bane of the electrical era

Pictured above is a bad case of wire blight — a spreading, sprawling, stretching, and sagging affliction that threatens to blanket the nation with a chaotic web of wire more like the weaving of a demented spider than like the work of a rational and technological race of men.

If this example in the Berkeley hills near San Francisco seems extreme, look around your own community. And if *that* impression is bad, consider what it may be when we all "live better electrically" or when every man, woman, and child has a telephone line of his very own.



Most of tomorrow's buildings will be modern, but they will not all look alike. This article is the first in a FORUM series which will explain what is behind the diversity and where it may lead.

Modern architecture: its many faces

By PETER BLAKE

Some 25 years have passed since Americans who commissioned new buildings began to get them, more often than not, in a new style. Long before that time, any building that had up-to-date heating, lighting, and plumbing was called "modern"; but now the word "modern" began to acquire a new meaning—a meaning that had to do with the appearance, as well as the anatomy, of the building. The less knowing called this appearance "modernistic"—a clear sign that they were trying to describe a style; the more knowing began to call it modern—and wondered whether there was more to it than a way of building more cheaply.

Today, a mere generation later, this thing we call "modern architecture" is firmly established; it is also well on the way toward becoming the hallmark of a new American civilization. Throughout the world, in places where America's culture is not always valued very highly, our architecture is invariably acclaimed.

Indeed, so far have we come that serious critics, like Architect Eero Saarinen, believe we are almost halfway up toward a new peak in the architecture of the Western World—a peak as impressive as that of Greek and Roman architecture, of the Gothic and the Renaissance. The exact shape of this peak is hard to ascertain at this early stage; the mountaintop is still shrouded in clouds. For all we know now, there may lie ahead a whole range of mountains with several peaks—instead of a single summit. (Gothic architecture was like that.) In any event, we are on the first plateau. It is a good time to recapitulate, to check on past performance, to get rid of superfluous ballast, to look ahead.

Spidery scaffolding supports exhibition dome now going up in Paris. Such light structures came in with steel, gave architecture a new grace and elegance. Architects: Camelot, De Mailly, Zehrfuss.

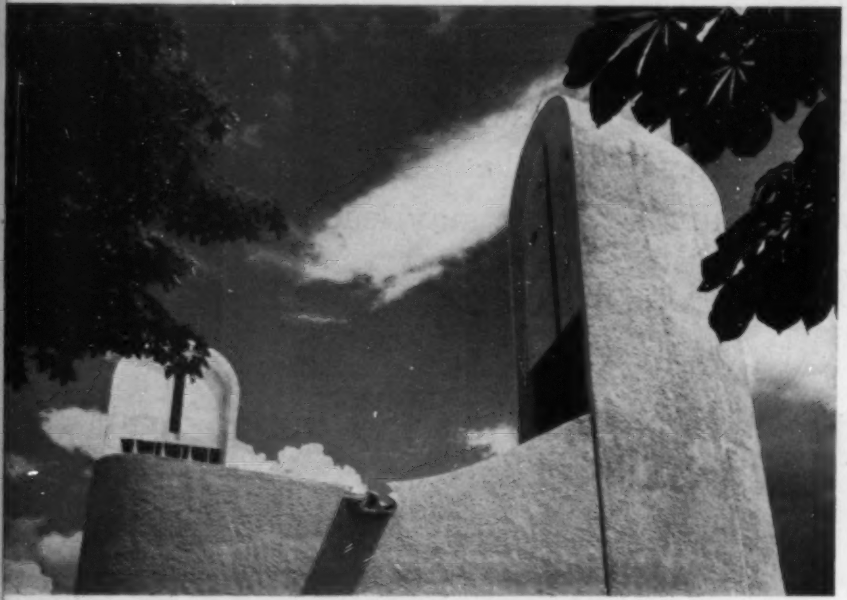
Just how much does the average client or consumer of modern architecture know about the style of the building he has commissioned and uses every day? Naturally, he can see where his building differs from buildings put up before the thirties: there is more glass and less (if any) decoration; the lines are simpler and the surfaces plainer; roofs are flat more often than not; and the interiors usually have an air of sleek, competent packaging—everything is built in, recessed, flush.

Beyond such superficial observations, the average client or consumer knows little. Rarely, if ever, do newspapers discuss architecture as they discuss the theater, movies, TV, painting, or music. Among the popular magazines, only *The New Yorker* has a regular department devoted to serious architectural criticism; but even that column, being unabashedly biased in favor of certain trends and against others, tends to confuse the uninitiated as often as it helps enlighten them.

So the man who pays the bill knows less about the architecture he is getting than he does about any other aspect of his project. And unlike the buyer of a $5,000 painting—who may cheerfully admit that he knows nothing about art, but does know what he likes—the buyer of a $5 million building can hardly afford to remain ignorant about architecture.

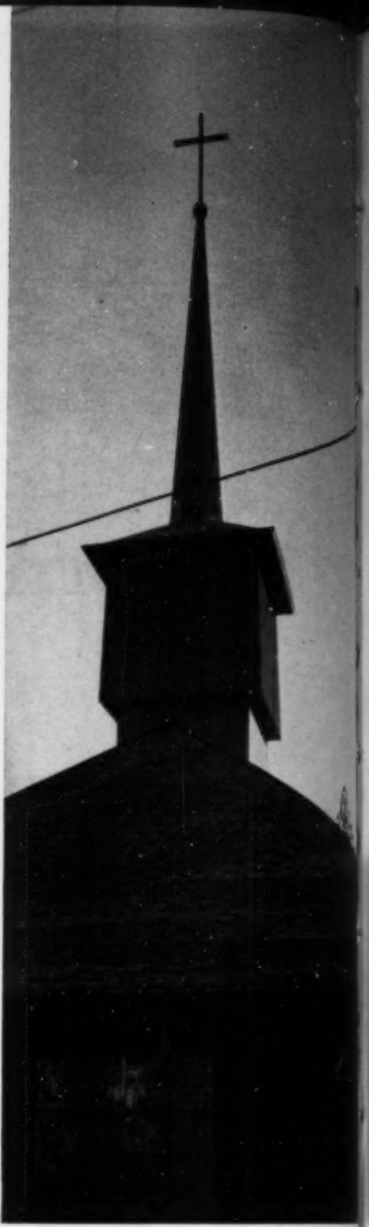
For architecture is not just a way of packaging a rather large product to attract potential impulse-buyers. Architecture is a system of organization, a way of putting things together. The same client's program, in the hands of architect A (who uses system A), will produce one sort of plan, one sort of space, one sort of exterior expression. In the hands of architect B (who subscribes to system B), the very same program may be solved in an entirely different manner, all the way through.

This does not mean that there is an infinite number of such "systems of organization." There are probably not more than half a dozen different groups, schools, or



MOOSBRUGGER—LIFE

Two civilizations, two kinds of modern architecture: at the left, Le Corbusier's chapel at Ronchamp in the Vosges Mountains of eastern France is plastic, curvilinear, white, stucco-finished—unmistakably Mediterranean in character. At the right, Pietro Belluschi's church in Oregon is angular, straight-lined, natural-finished—unmistakably the product of a wood-building, northern country. In its particular setting, each has equal validity, each is equally "modern," and each belongs to an equally ancient tradition.



ROGER STURTEVANT

trends—because the creation of a really new, coherent way of putting a building together is a mighty task.

Nor does it mean that one system is better or more efficient than the next. It only means that the systems are *different*. The differences among them rest on the complex preferences, prejudices, backgrounds, and experiences that can be found among the originators of each system. For unlike a mathematical equation, which is satisfied by only one "correct" answer, an architectural problem can be met in many ways. The variety thus created keeps the scene from becoming monotonous and enriches the world.

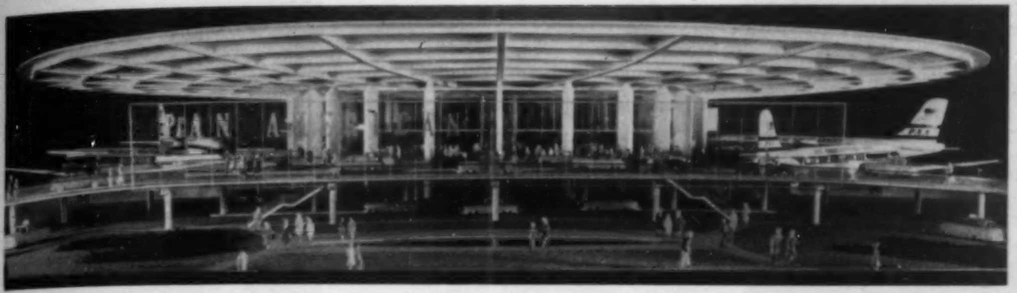
And architecture—unlike "styling" or "packaging"—possesses another quality that is of the greatest importance to any client or consumer: it only starts to live after the job is done. A box of Kleenex tissue is through once it has been designed, manufactured, sold and used up. The cycle is short, simple, direct. But a good building is a living organism—it starts to do things of its own accord once it has been born. "We shape our buildings," Winston Churchill has said, "and, afterwards, our buildings shape us." Good architects know how to breathe life into a building; it becomes a powerful force once the building is left to its own devices. The man who says that he knows nothing about architecture but knows what he likes had better take another look at his wife: he may be married to a Kewpie doll.

The ground rules are complex

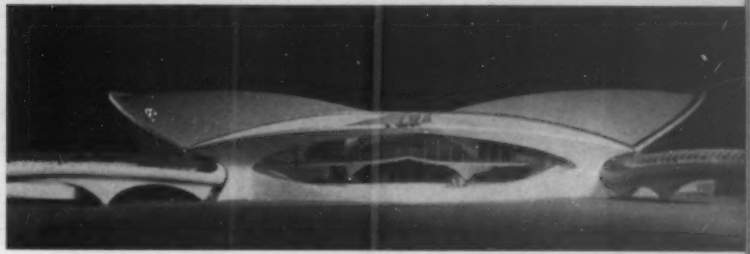
Some things about modern architecture *everybody* knows, of course—or thinks he knows: he has been told that a "modern" building is more functional than so-called "traditional" architecture would be. This he understands to mean two things: first, that the new style is very practical; and, second, that it has no "tradition." He undergoes some shock, therefore, when he learns that buildings which architectural juries rank very high in competitions may, at times, be of dubious practicality; that they can cost a pretty penny to build; that whole groups of "modern" architects do not swear by functionalism at all; and that others feel they are working in the main stream of an ancient tradition.

And as he gets closer to his subject, the complexity seems to grow rather than diminish; what appeared simple at first turns out to be anything but simple. Take the very concept of simplicity itself: on closer inspection, the buildings that appear simplest in their finished form turn out to have achieved that appearance by fairly complicated means, and at no reduced cost. Meanwhile, buildings that look complicated turn out to be relatively simple in terms of what goes on inside them—and quite inexpensive to build. Moreover—as in the case of "functionalism"—the observer soon discovers that there are many "modern" architects who do not subscribe to "simplicity" at all; they feel that a kind of "organic complexity" will produce the most convincing architecture for a complex era.

If these tendencies in architecture today seem confusing, it may make sense to keep in mind that it is the *life* of the building that matters, not its conception and growth. A "simple" looking building may have been



BALTHASAR KORAB



Same problem, two approaches: above, Pan Am's new Idlewild terminal grew out of engineering principles; at the right, TWA's originated in pure sculpture. The first approach *can* produce beauty—but not automatically; the second *can* produce practicality—but, again not automatically. Although the end results often look similar, the two approaches are philosophic opposites. Architects: Tippetts-Abbett-McCarthy-Stratton; Ives, Turano & Gardner (for Pan Am); Eero Saarinen & Assoc. (for TWA).

created by the most tortuous detours imaginable—but once completed, it becomes an influence for greater simplicity and order in the lives of those who use it or merely see it. A "complex" building may have been very simple to build—but once completed, it can only serve to generate more complexity. (When such complexity is ordered—or "organic"—it may be a salutary influence in itself, but it will be a different influence.)

If the traveler from the world outside architecture has the courage to go on, he may next try to find out what is meant by "organic" architecture. Here the paradoxes are less pronounced, for the concept of "organic" architecture is rather broad in itself. It means that man has sought to build as nature does, in a more natural, more sentient, more rounded way. Organic architecture as a historic fact claims a special affinity with America (and rightly so); yet, it was hailed in Europe long before it was appreciated in the U.S.

The roster of paradoxes grows longer and longer: there are those who stress the ideal of "regionalism" in architecture—but their buildings are often curiously alike, whether built in Oregon, Norway, Switzerland, or Japan. And there are others who pride themselves in their grasp of twentieth-century technology and produce what the public thinks of as "miracles of engineering"—but *their* particular structures are often hardest of all for twentieth-century engineers to construct. Some of the new large concrete shells, for example, may look as if they "grew right out of geometry," whereas they may actually violate structural theory—which, in turn, grows out of geometric laws.

The trends are many

This is the first in a series of articles which will seek to explain the paradoxes that confuse the layman. An attempt will be made to separate some of the major trends in architecture today by going back to their sources, their aims, and their characteristic attitudes.

When Saarinen suggested that we had just reached the first plateau, he was speaking in part as a leading exponent of one of these major directions in modern architecture. In fact, of course, there are several parties of mountaineers; each party started out in a different valley; each has now reached its "Camp One"; each has used its own maps. Each party, indeed, has made its own guesses about the shape of the peak—or peaks—ahead. Somewhere along the line, two or three of these parties may have joined forces. Other parties may do so as the ascent continues.

So there are only two things reasonably certain at this stage, halfway up: first, where each party of mountaineers started out; and, second, where they are now. Their final objective, as suggested, is still shrouded in clouds. This series of articles will trace these early developments and hazard a guess about the future.

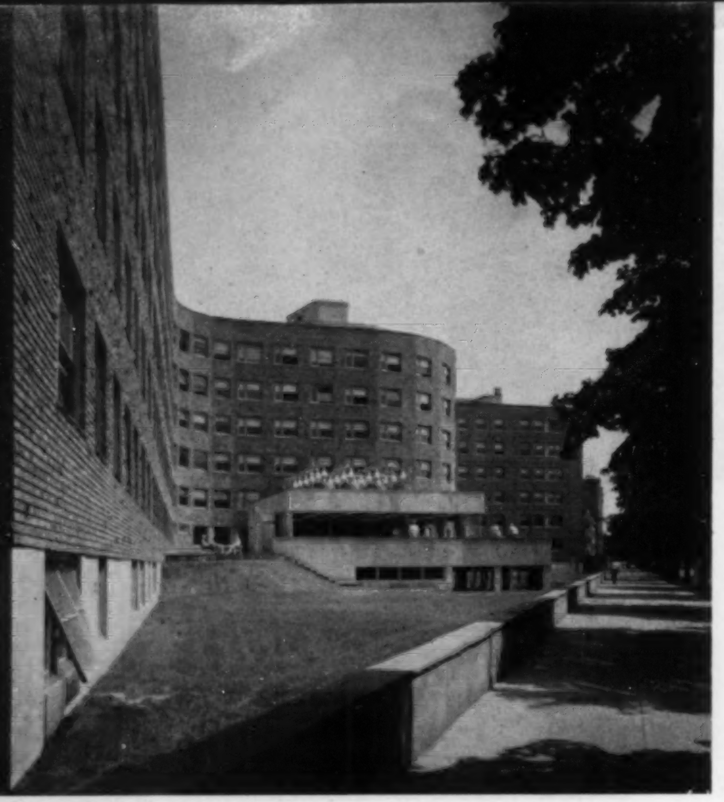
Why break with the past?

A newcomer to architecture may reasonably ask why it was necessary to invent a new kind of architecture in the first place. Was not the Parthenon good enough?

The question may be answered in three ways:

First, our era needed a new kind of architecture because we began to need (and learned to construct) two entirely new building types—the first radically new building types since the cathedral. One of these was the tall building, starting with the Home Insurance Building of Chicago in 1885; and the skyscraper just could not be built in the shape of the Parthenon or, for that matter, in the shape of Chartres. Instead, it was necessary to develop an entirely new architectural expression—and a great architect, Louis Sullivan, took the first steps along that road. The other new type was the modern factory, one story high and putting vast areas under one roof.

Second, our era—and our architecture—had to reflect



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Available building materials often suggest different forms of expression: Aalto's student apartments at M.I.T. ended up in the shape of a whiplash curve partly because concrete and brick permit—and even suggest—more fluid forms. Wurster's office building in Sunnyvale, Calif. made a virtue of straight lines (and emphasized their straightness with long, horizontal sunshades) because wood is essentially a straight material. Yet, in spirit, the two buildings have much in common.

ROGER STURTEVANT

and respond to the biggest physical change man had undergone in several thousand years—the change from a relatively slow-moving to a relatively fast-moving animal. The many implications of that change were best understood by Frank Lloyd Wright. His concept of "space in motion"—about which more later—radically changed the forms of our buildings.

And, finally, our era needed a new kind of architecture because we needed a faster, more mechanized building technology to keep up with the fantastic population growth that has dominated the past 100 years of life on earth—the growth from 1 billion people in 1850 to 2 billion people in 1950, to an expected 3 billion people in 1975. This simple and terrifying statistic is responsible for almost every major change, both for the better and for the worse, in the way we live today.

These three momentous developments—bigger scale, faster motion, and more efficient technology—are most generally associated with the nature of America. So the architecture we call "modern" has always had a special affinity for America, and America for it.

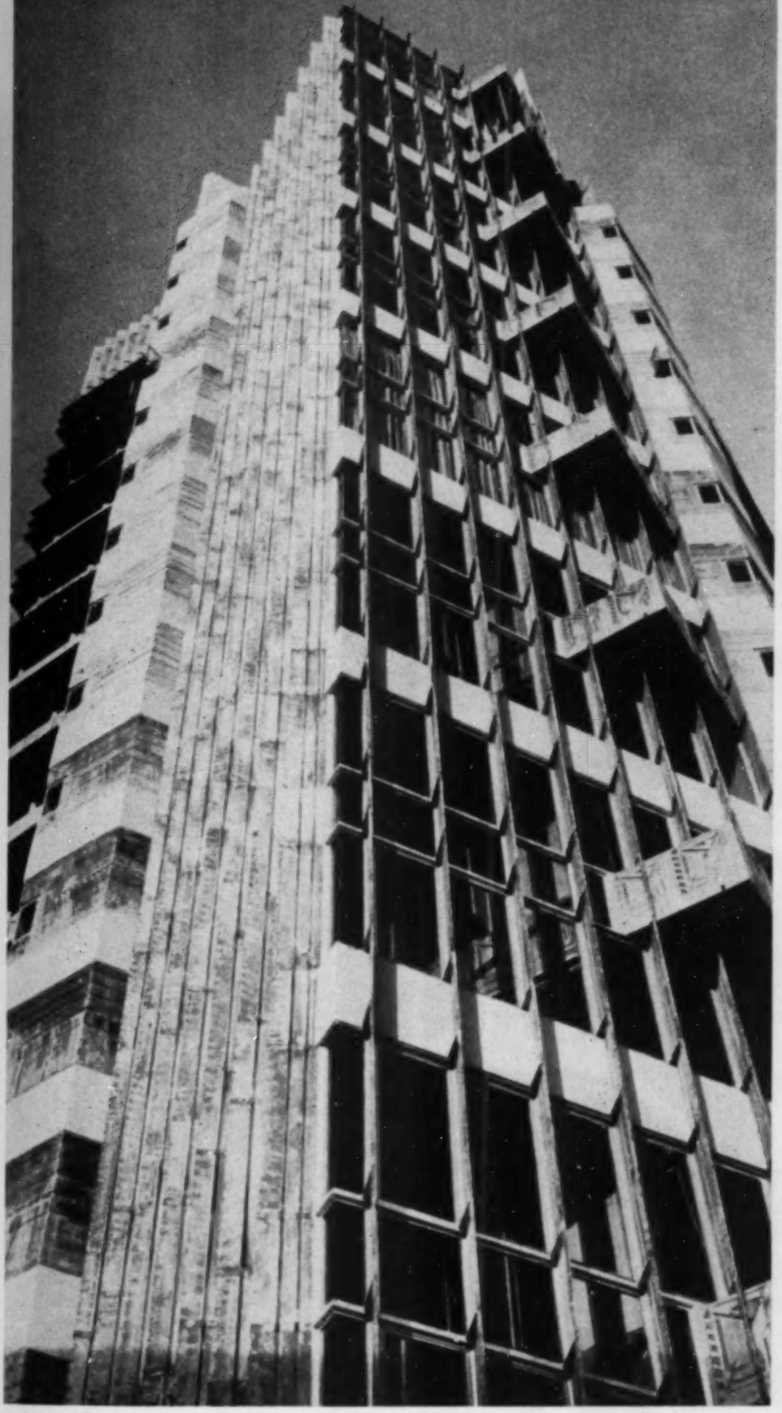
And there is another reason for this special affinity. America is often called a "continuing revolution." Constant change is considered, at best, a necessary evil in most areas of Europe. To us it is an exhilarating characteristic of a youthful and energetic society. We were —and are—a nation with more space, more resources, *and more left undone* than any country in Western Europe. So the answer Americans might give to the question, "Why invent a new architecture?" is plainly—"Why not?"

New technology—and the men who used it

That, roughly, was the state of affairs in all the valleys from which our mountaineers started out. Their equipment was excellent: there were new techniques of building with iron and steel rods and rails, iron and steel plates, sheets of glass. There was the great impetus of mechanization in every field—in transportation and in the manufacture of goods of every description. There was the growing interest in making things that were "honest"—honest to the material, honest to the mode of manufacture, honest to the ultimate use. (Greater honesty was necessary so that rapid development could continue; for it could not have continued on a false base.) There was also, after 1860, the sudden influx from Japan of new ideas about arts, crafts, and architecture. Rarely had so many new tools of the hand and of the mind appeared within so short a span of time.

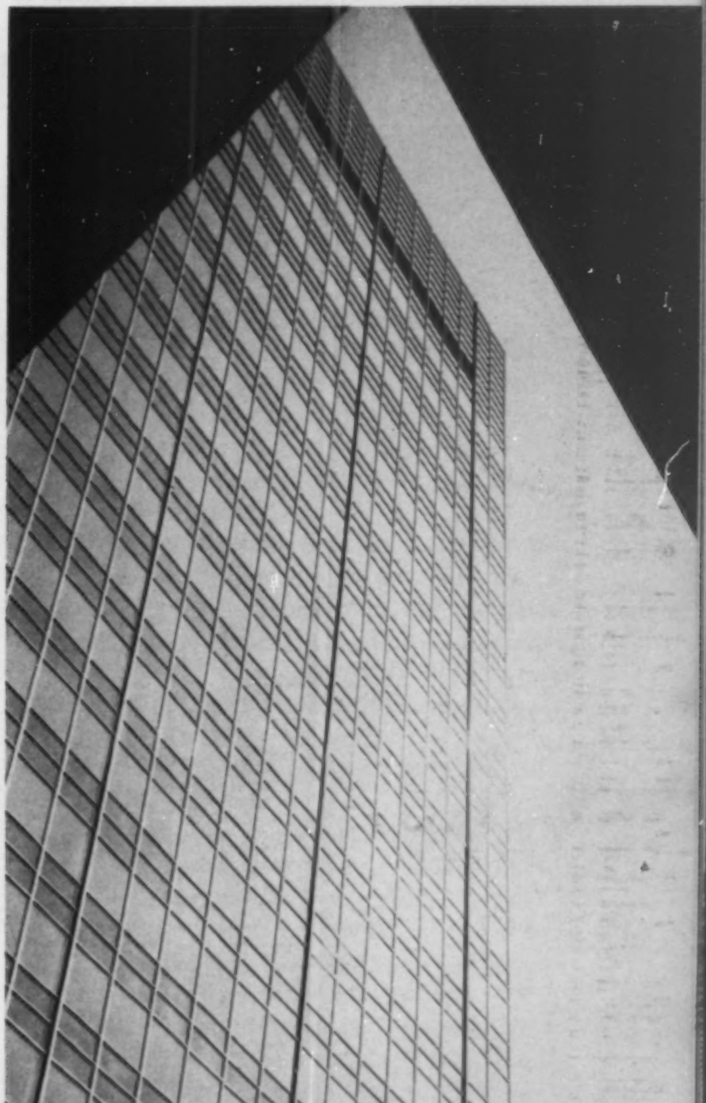
But a new style is not created by a statistic, or by the invention of a better mousetrap. It is created by great architects, appearing at the right time, and capable of fusing the tools, the influences, and the various pressures into a single, beautiful, and convincing statement —into a single system of order. In Europe and in America within the past hundred years such architects appeared in astonishing profusion: Richardson, Sullivan, Root, and Wright in America; Mackintosh, Wagner, Loos, Van de Velde, Behrens, Berlage, Perret, and others in Europe. These men started the ascent.

They started the ascent from different points at the foot of the mountain range: some started from the cultural base of Mediterranean civilizations; others from the base of Northern Europe; still others came from the American prairie. In background, in temperament, and in esthetic preference these men could hardly have been more different. But all had this in common: they responded to the great problems of our age—the pressures of population growth and of the growth in popular democracy; they recognized the impending crisis of the individual in a mass society; and they all had an intuitive grasp of the technical tools that had been placed into their hands—and, more important, of the technical tools that would soon become available. END



A. Y. OWEN—LIFE

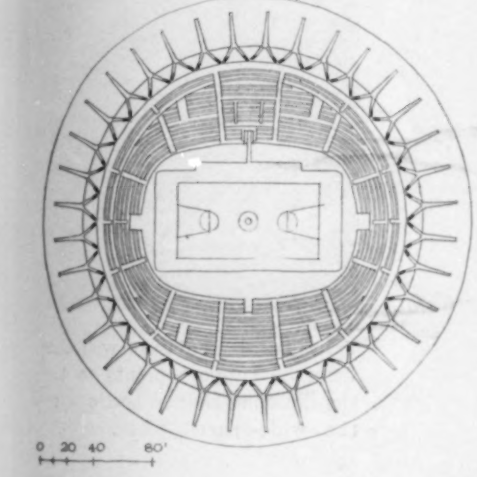
BEN SCHNALL



Two skyscrapers: above, Frank Lloyd Wright's "organic" Price Tower in Oklahoma; at the right, Skidmore, Owings & Merrill's smooth Lever House in Manhattan. Wright's tower is constructed like a tree—its core is the trunk, its cantilevered floors are the branches. Although this is an entirely modern building made up of standard parts, its richly varied form suggests that it was designed to house individuals, rather than members of some "faceless crowd." SOM's Lever House makes a virtue of anonymity and orderliness, shows a degree of "simple," sleek finish attainable only with today's machine technology. It does not "glorify the individual," nor does it express the client's personality or preferences as Wright's tower does; instead, Lever House provides a neutral backdrop against which the individual may express his or her own self. In short, no two buildings could be more different—though both are "modern." Subsequent articles will take up these differences in detail.

For the 1960 Olympics, Rome has a new arena with a prefab concrete dome 194 feet across—outspanning St. Peter's by 57 feet. Yet it went up in only 40 days.

Nervi's Olympic dome



Pier Luigi Nervi, whom many consider the greatest structural engineer of our time, is best known for his great and delicate structures—Nervi calls them "coverings"—of reinforced concrete. The 5,000-seat Olympic Sports Palace shown here is the latest of these structures, the first of which was built in 1927. Speaking of that first building, Nervi recently said: "I was young and unknown then and the possibilities of concrete were not realized, but I always had faith in myself and concrete."

That his faith was well placed is attested by his latest "covering," the first major structure Nervi has built for his home city, Rome. The arena is the first of a group of buildings he will build for the 1960 Olympic Games. Now being built is a larger arena (15,000 seats) and a 50,000-seat stadium.

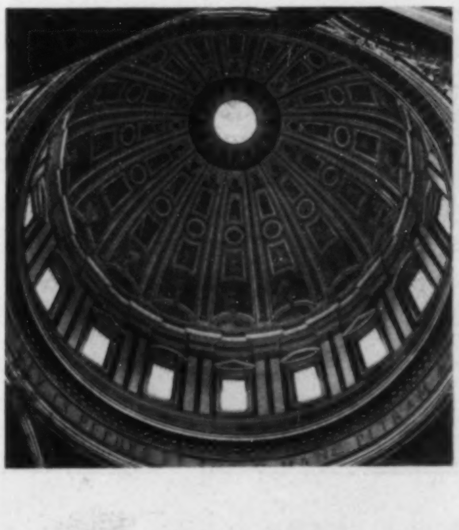
The arena at left, which many consider Nervi's best work to date, is not a solo production, but the result of a close collaboration with Rome Architect Annibale Vitellozzi. Vitellozzi's clean plan and careful details do not compete with the dramatic structure, but enhance it quietly while themselves remaining subordinate.

The structure, of course, is of reinforced concrete, which Nervi considers "the finest material man has found to this day." For him, "concrete is a living creature which can adapt itself to any form, any need, any stress."

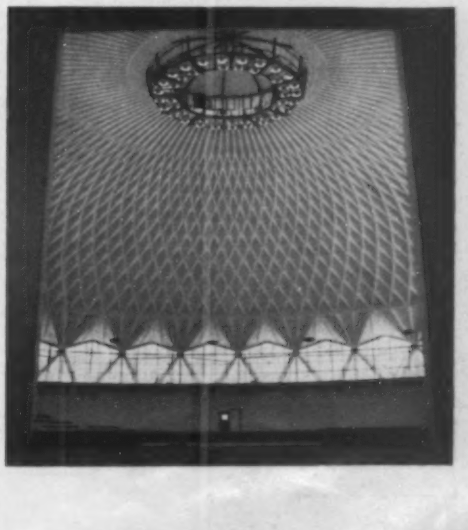
With Nervi in command, concrete can, indeed, be made to perform magic—so much so that one American critic has dismissed Nervi as "a great ceiling decorator." But decoration, Nervi asserts, is far from his mind: "Beauty does not come from decorative effects but from structural coherence."

A comparison between the Sports Palace dome and the high-stilted Michelangelo dome at the crossing of St. Peter's in Rome illustrates

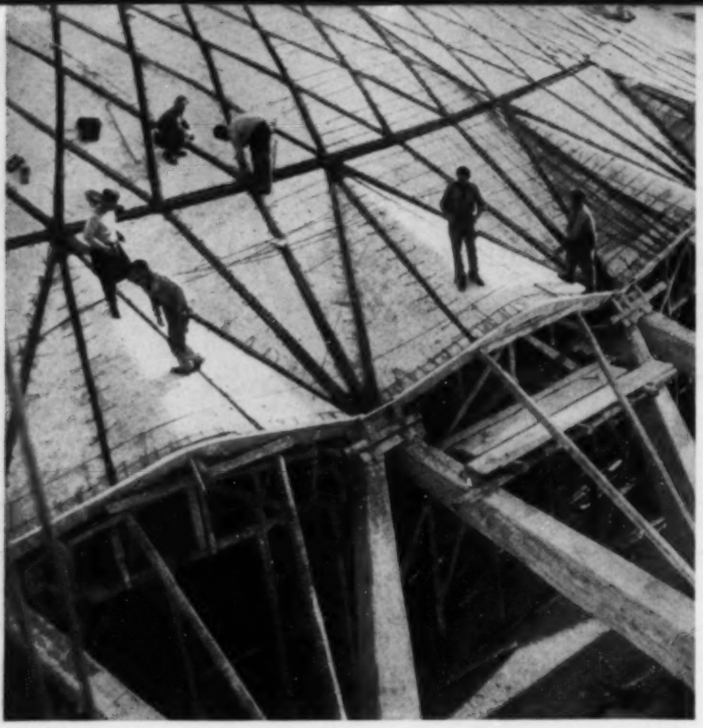
Michelangelo's chain-tied dome.



Nervi's ground-hugging dome.



DAVID LEES



Precast sections, here shown before concrete was poured to form the ribs, range through 19 sizes. The largest sections (770 pounds, 26 square feet) are the wedge-shaped pieces at the outer edge of the dome.

Nervi's point. Michelangelo's dome depends not at all on structural coherence for its beauty. In fact, the structure is aided by no fewer than ten husky chains which have been drawn around its ribs to keep the dome (and its supporting columns) from spreading outward.

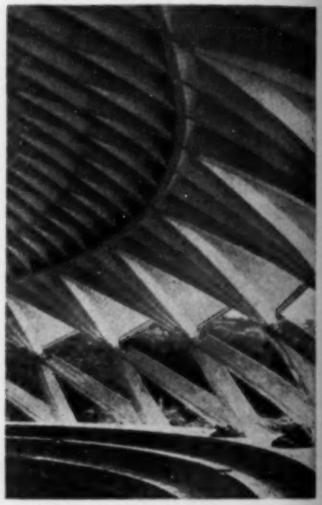
Nervi's dome, on the other hand, is braced on 36 Y-shaped piers (plan, page 83) which were poured in place. These supports lean inward at an angle tangent to the curve of the dome (photo, page 82), thus allowing the load to be carried to the foundation without a change of direction. The foundation consists of a precompressed 8-foot-wide reinforced concrete ring which reduces the tendency of the supports to spread outward by tying them together at their feet.

The dome is made up of 1,620 precast concrete sections 1 inch thick which were set on rings of scaffolding by two giant cranes, one located in the center and one operating at the perimeter.

The edges of the satiny-finished precast sections form ribs (photo, right) which, when filled with concrete and reinforcing steel, bind the sections together. Over the top, an additional 1¼ inches of mesh-reinforced concrete was poured, followed by 2½ inches of insulation and roofing.

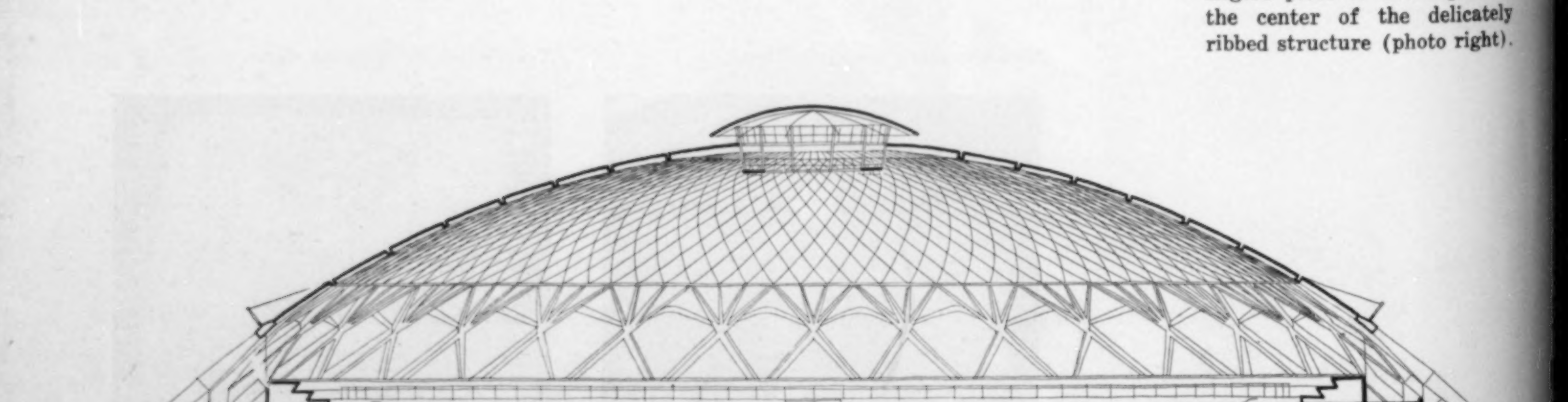
Nervi and Vitellozzi, who also acted as contractors on the project, bid a low $424,000 for the work (less than $8.25 a square foot). Low costs are standard on Nervi designs. "With economy," Nervi recently observed, "clients will accept daring and even beauty. Low costs have a high esthetic value."

COURTESY L'ARCHITETTURA



Triangular sections web out from 36 support points to tie the diamond-shaped sections to the wide-spaced piers.

Cross-section shows the low rise of the dome from the angled piers to the cupola at the center of the delicately ribbed structure (photo right).



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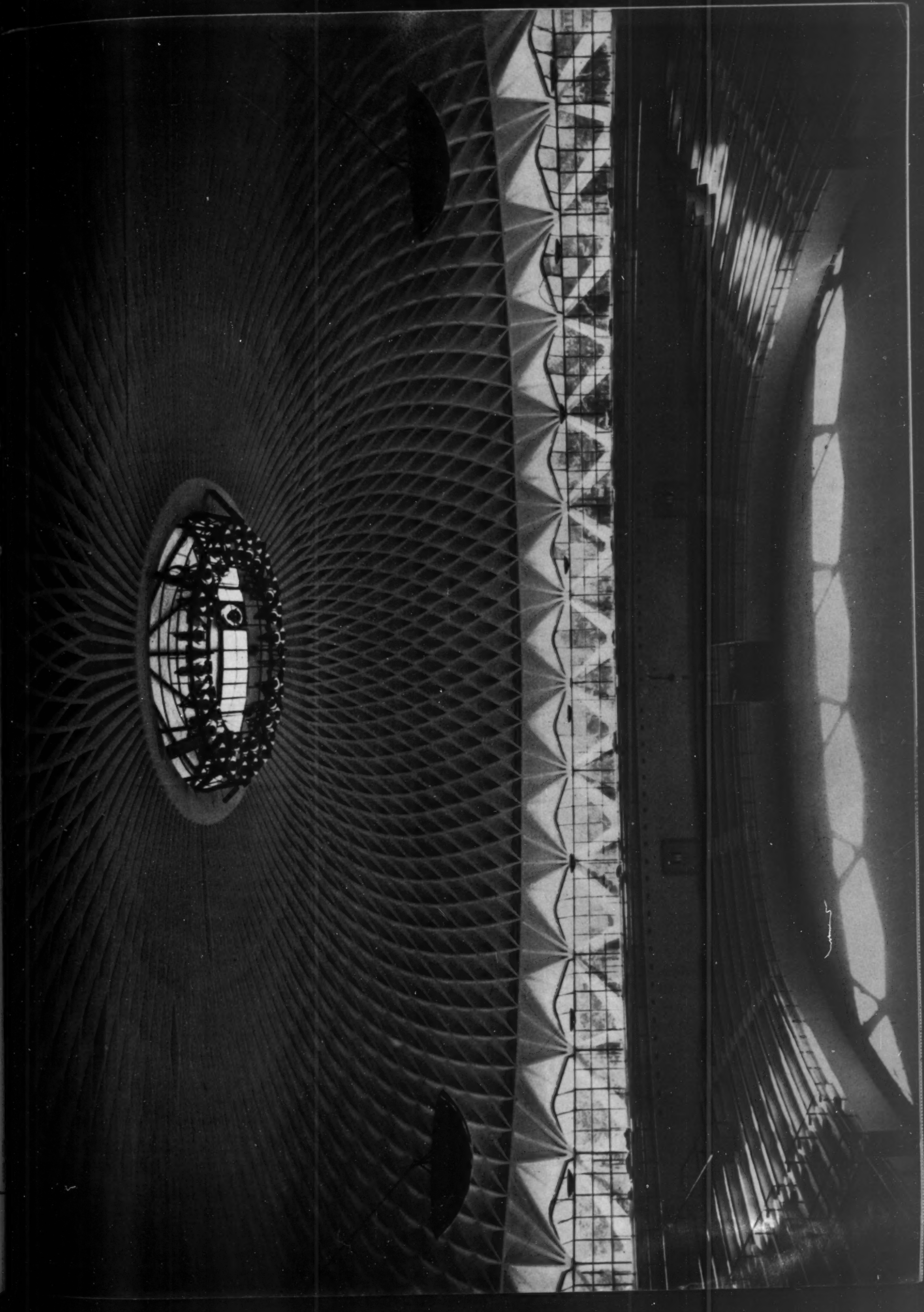


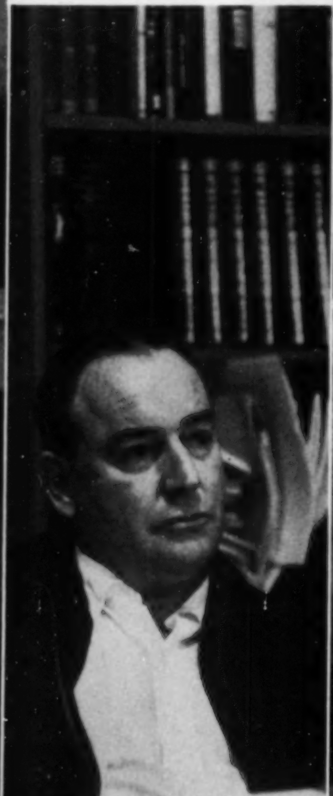
The Rockefeller touch in building

JOHN D. 3rd (51),
culture.

NELSON (49),
IBEC and promotion.

LAURANCE (47),
conservation.

WINTHROP (45),
housing and farming.



DAVID (42),
uptown and downtown.

GEORGE SKADDING—LIFE
ROBERT PHILLIPS—BLACK STAR
ARTHUR SHAY—LIFE
B. WEINBERG

The third generation of a philanthropic family is exerting a varied—and surprisingly rich—influence on building.

Without slighting charity or the doing of good works, the third generation of Rockefellers has cut a wide and impressive swath in a little-noted field of endeavor—building. The total value of the buildings the five grandsons of John D. Sr. own, have helped finance, or have prodded into being, comes to some $400 million. This compares rather favorably with the $200-odd million holdings of Webb & Knapp, thought to be the busiest of U.S. builders. And if the building accomplishments of the previous two generations of Rockefellers are added to this total (see box, page 89), the family can be credited with influencing close to $1 billion worth of construction.

Ivy-clad and modern, monumental and modest, the Rockefeller buildings range the rainbow of architectural styles; they span the world east and west from Tokyo to Baghdad, north and south from the jangles of Manhattan to the jungles of South America; and they mirror the changing tastes and interests of three generations of outstanding individuals.

The buildings in which John D. Rockefeller Sr. invested, those which were contributed by his son, and most of those brought into being by his five grandsons may seem quite conventionally similar in their humanitarian purposes — hospitals, universities, and museums scattered widely by each generation across the face of the globe. But the differences in method and motive are acute. The first generation was content to donate the land or the construction funds in support of a philanthropic cause, and then withdraw from the scene. The second generation is somewhat more interested in the results, financially and architecturally. And the third generation stays on the site as an active, creative force in the entire building process. One explanation for the differences is, simply, that the grandsons have less money; to make a comparable contribution they must work harder, both in the fund-raising and in the plan implementation stages. Another explanation is that they like building.

The brothers, now in their active forties, learned the building business from the top down during the depression. Their father was then knee-deep in plans for Rockefeller Center (see box, page 91). It is not surprising, therefore, that the shaping of environment is their strongest common interest. The creation of beneficial spaces—opportunities for something to happen that they approve of—that is their vocation. In the principal family offices on the 56th floor of 30 Rockefeller Plaza in Manhattan, blueprints and building fund reports and new pictures of construction crowd the shelves. Architects are frequent visitors, and most of them agree that the brothers are knowing about the subject of architecture.

Theirs is not the passion for building that inspired well-endowed families of history to build pretentious bastions against immortality. Theirs is the more modest hope that by providing space of the right sort for a special group of people, the group will be able to do its job better.

New York City is currently the focus of this hope. But the Rockefeller interests fan out widely from Manhattan, beyond the horizons of any one region. Most of their activities have been singly pursued, making for a competitive kind of specialization among the brothers. But other activities, like IBEC (the International Basic Economy Corp.), set up as a private, family Point IV program after World War II, have been jointly undertaken and financed by the Rockefeller brothers.

David's pigeon

On the basis of their respective temperaments, it has worked out that the oldest and youngest of the brothers, John D. 3rd and David, have accepted most of the responsibilities in New York, while the intermediate brothers have explored more exotic fields.

David is sometimes pigeonholed by New Yorkers who have difficulty keeping the family straight as "the Chase Manhattan Bank Rockefeller." And he is, indeed, vice-chairman of that institution and a prime mover in the bank's downtown expansion (Forum, May 1957). But he could also be called, with equal accuracy, "the Rockefeller Institute Rockefeller." For the Institute, founded in 1901 by a grant from John D. Rockefeller Sr., watched over rather conservatively by his son for half a century, became David's worry in 1950.

In the course of the past four years David has transformed the Institute from a secluded, sycamore-shaded collection of experimental medical facilities (York Avenue and 66th Street), to a strikingly aggressive modern graduate university. Included in the $9 million building program sparked by David and the Institute's new president, Dr. Detlev Bronk, are a conference hall and lounge to which is connected a hemispherical auditorium of a particularly brilliant blue, a student residence, a 13-room house for Dr. Bronk, and a concrete-roofed parking shelter. All the new limestone and glass buildings were designed by Harrison & Abramovitz' Wallace K. Harrison, who has been architect to the Rockefellers ever since the early planning stages of Rockefeller Center.

David's most important role in the program was not that of the money man, though he did finance the landscaping. It was rather to find out what should be done, then take over as job captain. His first act as chairman of the Institute was to set up a committee to review the curriculum, physical plan, and administrative policies. Among the committee's findings: the Institute was no longer the national leader in medical research; other scientific bodies, having profited from the Institute's pioneering, had set up similar programs, now pursued similar objectives with equal skill. If the Institute was to re-establish its po-

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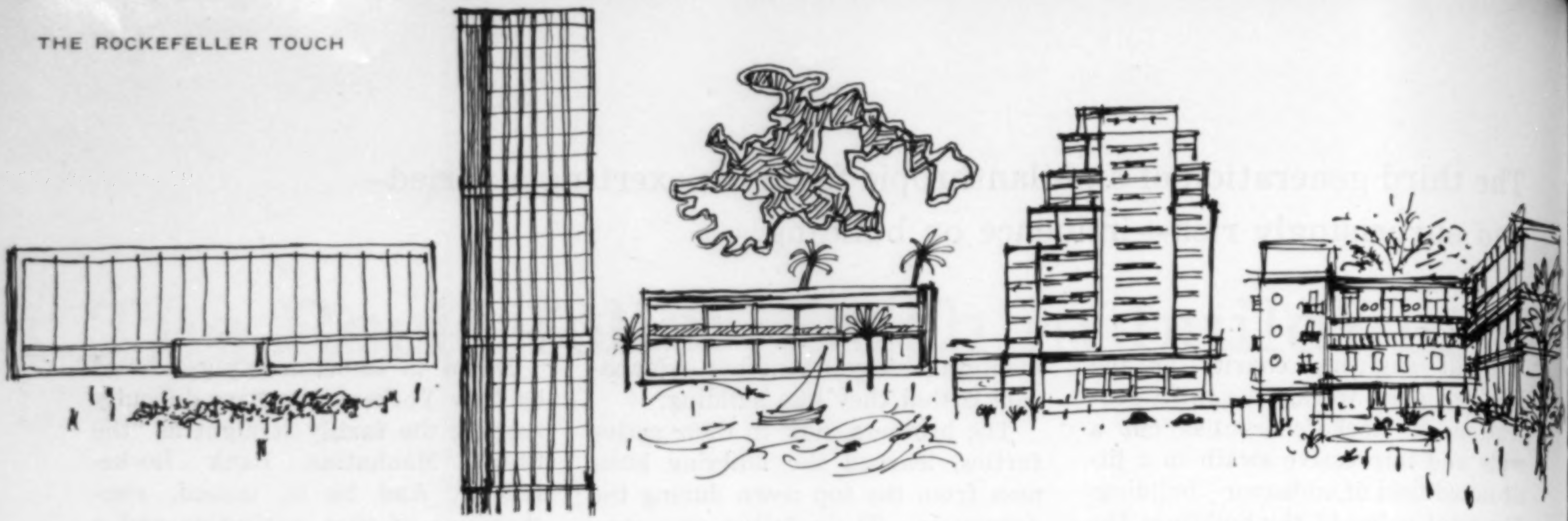


BELLEVUE MEDICAL CENTER, N.Y. | CHASE MANHATTAN BANK | CANEEL BAY PLANTATION, ST. JOHN, V.I. | SLOAN KETTERING-MEMORIAL CENTER, N.Y. | AVILA HOTEL, CARACAS

sition of primacy, the committee decided, it should put heavy stress on the recruiting and training of promising medical researchers.

Whether or not the committee's conclusions and the architectural results will make sense to medicine's new generation cannot be determined yet (and there are those who doubt that glass-walled lounges, furnished by Knoll, are the answer to the medical profession's problems). But David Rockefeller has put his executive talents, the prestige of his name, as well as a sizable fortune on the architectural side of the argument.

David's inclination to gamble on a building solution to a human problem can also be seen in two other corners of Manhattan. One is the Morningside Heights district where, ever since the twenties, a neighborhood of charm and distinction has deteriorated in a pattern all too familiar to U.S. cities. Five great institutions—the Jewish Theological Seminary, Riverside Church, the Juilliard School of Music, Columbia University, and its neighboring International House—faced the danger of being completely surrounded by slums, yet they were unable to get together on a workable program of counteraction. David, who had taken over the chairmanship of the International House for the family, succeeded in organizing these institutions and eight others into Morningside Heights, Inc., an enlightened, yet not purely altruistic, rehabilitation agency. To date the most tangible result of Morningside Heights, Inc. is Morningside Gardens, a $16-million cluster of six cooperatively owned apartment houses built last year with federal aid under Title I of the 1949 Housing Act. Designed by Harrison, the development has no particular architectural distinction—but it is there (one of six Title I housing projects to be completed in the U.S.), and it is already a social success.

Laurance's islands

Laurance Rockefeller's favorite color slides are two virtually identical shots from the stern of a Rockefeller power boat. The first is of the blue-green waters off Maine's mountainous coast line, where the Rockefeller-developed Acadia National Park covers some 30,000 rugged acres. The other is of the blue-green waters surrounding the Caribbean's Virgin Islands, one of which, St. John, has largely been made into the 29th U.S. National Park thanks to Laurance's personal generosity.

Even with these seascapes in the back of his mind, Laurance has been able to share certain New York assignments with David and John. One of them is the Memorial Center for Cancer and Allied Diseases, of which he is president. He and David recently collaborated on a deal to acquire neighboring land for staff residences that still has city officials gasping. After waiting for two years for the complicated machinery of New York's renewal operation to provide the land by gradual condemnation and write-down resale, the brothers quietly took the initiative, found that they could buy it piece by piece for a total cost less than the condemnation value.

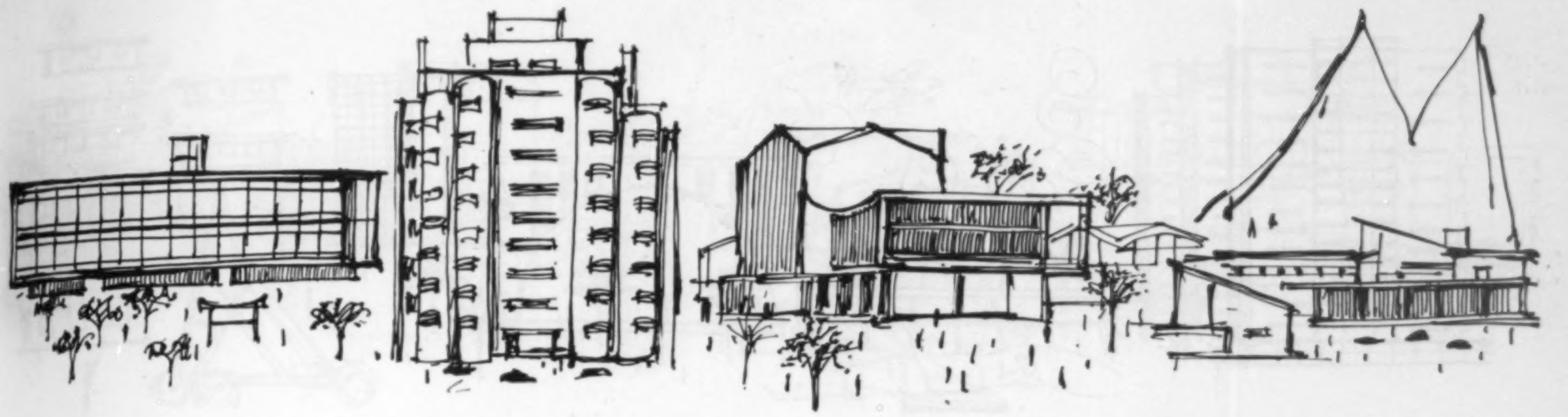
An undertaking Laurance considers more exciting is his Dorado resort in Puerto Rico. Unlike Rockefeller-financed Colonial Williamsburg, unlike Laurance's posh Caneel Bay tourist heaven on St. John, and unlike his more conventional Jackson Lake Lodge in Wyoming, Dorado is a profit-making enterprise. Yet, in its own businesslike way, it shares with those nonprofit activities the long-range purposes of conservation and education. Its object is to show the people of Puerto Rico that tourism can, at the same time, make money and preserve natural beauties without setting up an invidious contrast between the tourist and native economies. It also seeks to avoid the architectural follies of other sun-soaked resorts.

"What I want to steer clear of," says Laurance, "is building another Miami across the waters." He has done so by getting New York Architect Harmon Goldstone to design a rather unpalatial (for $4,250,000) hotel that will be ready by next season, and a 640-acre golf course, open to all comers.

Winthrop's houses

In the same green-and-blue part of the Caribbean another young and profitable Rockefeller brothers enterprise is flourishing. Stretching out from San Juan, Puerto Rico like jungle foliage are three vast housing developments, built by Ibec Housing, Winthrop Rockefeller, chairman.

From IBEC's early investigations it became clear that the best way to inspire native faith in a local economy was for IBEC to go into business there itself. And housing was the most desperately retarded economic area. From this realization grew Ibec Housing, an inde-



INTERNATIONAL HOUSE, TOKYO | APARTMENT HOUSE, N.Y. | HUMANITIES CENTER, DARTMOUTH COLLEGE | JACKSON LAKE LODGE, WYOMING

pendent, profit-making subsidiary. Starting with a stake of $1 million in 1948, Ibec Housing has now built or contracted for $41.5 million worth of building in Puerto Rico alone. More than 5,000 Puerto Rican homes are represented in these figures. Others have been built in a development above Baghdad, Iraq. All were constructed by Ibec's own technique of mass-producing concrete houses—a method devised by old friend Architect Harrison.

Stage I of an Ibec Housing project is the pouring of floors in much the same manner that concrete roads are poured. Stage II is the craning into place of the steel "wall form," a giant mold in the shape of the projected house. Walls and partitions can be poured, thanks to the "wall form," in about an hour. The next day the form is removed and a roof slab is fitted atop the walls by a peculiarly supple piece of road moving equipment outfitted with a vacuum mat. Average rate of production even in the hot sun: a cool six houses per day.

The houses are modest enough by U.S. standards and costs. At $5,900 to $12,500 there are more buyers than houses, but these buyers are still pretty high on the social scale. The next step which might be urged on the Rockefellers is a more modest and accessible technology to reach the people in larger masses.

Winthrop is currently busily involved in trying to bring Ibec Housing to Florida's gold-plated East Coast. Margate, Florida will be more than a boom-town development; it will be a self-contained community, offering all the standard amenities of a well-established city including school, parks, and public buildings, and several exotic extras (such as 10 miles of canal that will serve as water avenues to the centrally located shopping centers when road traffic becomes a problem). Five varieties of homes have been designed by Ibec Housing for the town, ranging in cost from $9,650 to $12,900, land included. Plot sizes are scaled from 7,500 square feet to 13,500 square feet. The designs incorporate all of Ibec's experience in hot-weather housing, call for wood rather than concrete construction, dress up the old, tropical models to compete with Florida's best real estate offerings.

Meanwhile, 60 miles northwest of Little Rock, Arkansas, is another outpost of the family's building empire manned by Winthrop. As Arkansas outposts go, the hilltop home at Winrock is a fairly elaborate operation. It is not, however, the plush, dimly lighted environment that critics thought would be Winthrop's natural habitat after his gay (for a Rockefeller) bachelorhood and tabloidal divorce from Bobo Sears. The initial cost of the farm, when a world-weary Winthrop began building it in 1953, was $1,500,000. Improvements since then have been carried out on the same generous scale.

As Architect George Dudley, long associated with Winthrop, has said: "He was the only one who saw what could be done on that hill, the only one who saw what it could mean for the development of the whole state." But Winthrop's role as the recently arrived Arkansas booster is not restricted to agriculture. He has played a vital part in the development of the state's industrial possibilities, tourist opportunities, and

$1 billion of Rockefeller building

Here is a box score of the Rockefeller contribution to building over the past half-century. It includes not only direct gifts and business investments by three generations of Rockefellers in building ventures, but also the value of such Rockefeller-influenced projects as the new $94-million Chase Manhattan Bank. All estimates by FORUM.

	Total value of real estate
John D. Sr. and Jr. (1900-1940):	
1. Direct philanthropies (e.g., Rockefeller Institute, Williamsburg Restoration)	$500 million
2. Business investments (Rockefeller Center, housing)	$140 million
Total:	$640 million
Rockefeller Brothers (1940-1958): John 3rd, Nelson, Laurance, Winthrop, David	
1. Business investments	$100 million
2. Philanthropies and projects indirectly influenced	$250 million
Total:	$350 million
Grand total:	**$990 million**

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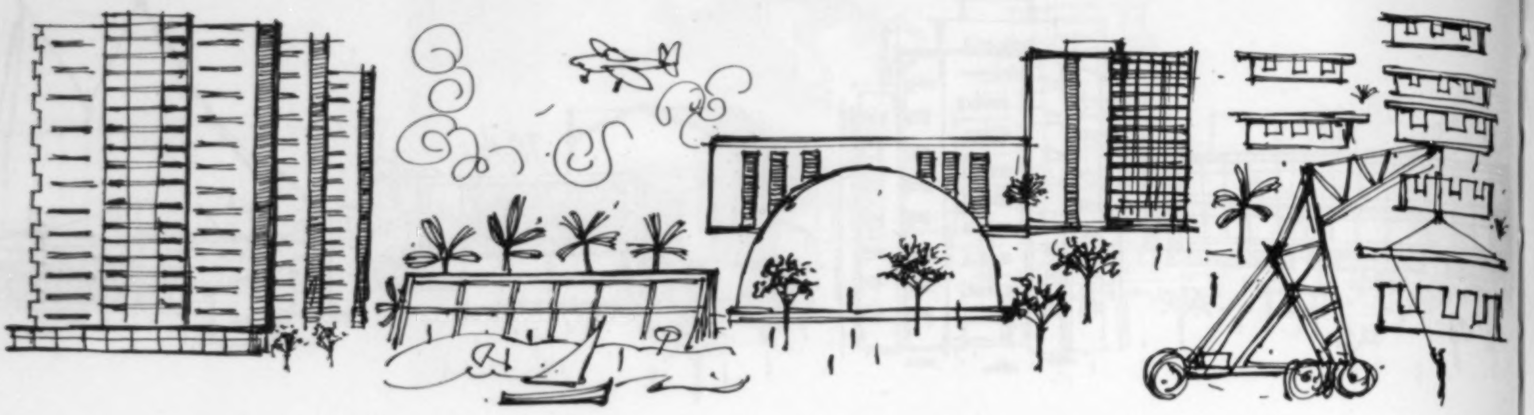

MORNINGSIDE GARDENS, N.Y.
DORADO HOTEL AND RESORT, PUERTO RICO
ROCKEFELLER INSTITUTE, NEW BUILDINGS, N.Y.
IBEC HOUSING, PUERTO RICO

educational growth. And in Little Rock's Negro district, he has volunteered to sponsor the city's first Title I rental housing project. There he has brought to the job a facility for friendship, a bluff openness that is not generally considered a part of the Rockefeller character.

Nelson's promotions

Nelson is gregarious in a more purposeful way. And his time spent in the government (some of the jobs: Coordinator of the Office of Inter-American Affairs, Under Secretary of Health, Education and Welfare, and a Presidential Assistant on Foreign Affairs) has equipped him with the diplomat's persuasiveness.

As helpful as Nelson's foreign service experience has been to the delicate dealings of the brothers in overseas building enterprises, it is also helpful to him in Hanover, New Hampshire. There, Dartmouth Alumnus Rockefeller (class of 1930) has the almost equally ticklish sell of a $7.5 million humanities center and student union of contemporary design. His fellow alumni consider the glass-fronted, Harrison-modern building somewhat outlandish in the midst of their eighteenth-century campus. But, if Nelson's record of salesmanship in other areas is any criterion, the doubters will probably be convinced.

The job of promoting architecture, one way or the other, has been consuming a substantial share of Nelson's considerable energies since 1931. He began in the early days of Rockefeller Center, with the responsibility for renting some 5,500,000 square feet of floor space. He succeeded so well that a $10,000 lawsuit was brought against the Center for unfair competition and coercion of tenants. The case was dropped before being brought into court.

Nelson showed the same kind of hustle shortly before World War II in the case of the high-rent apartment house he asked Harrison to build on West 54th Street, overlooking the garden of the Museum of Modern Art. New York was by no means apartment-hungry at that time, and it appeared that Nelson's plan, however commendable, had few chances of commercial success. Yet as a result of his peculiar talents, "The Rockefeller Apartments," as they came to be called, were fully rented before the building was up.

In his more recent dealings as chairman of Rockefeller Center, Nelson has shown a tendency to go slow, particularly in accepting suggestions for Center buildings of more modern design. To those who knew him in his role as chief advocate of the controversial Museum of Modern Art on West 53rd Street and as propounder of Rockefeller Center's advanced features, this is something of a disappointment.

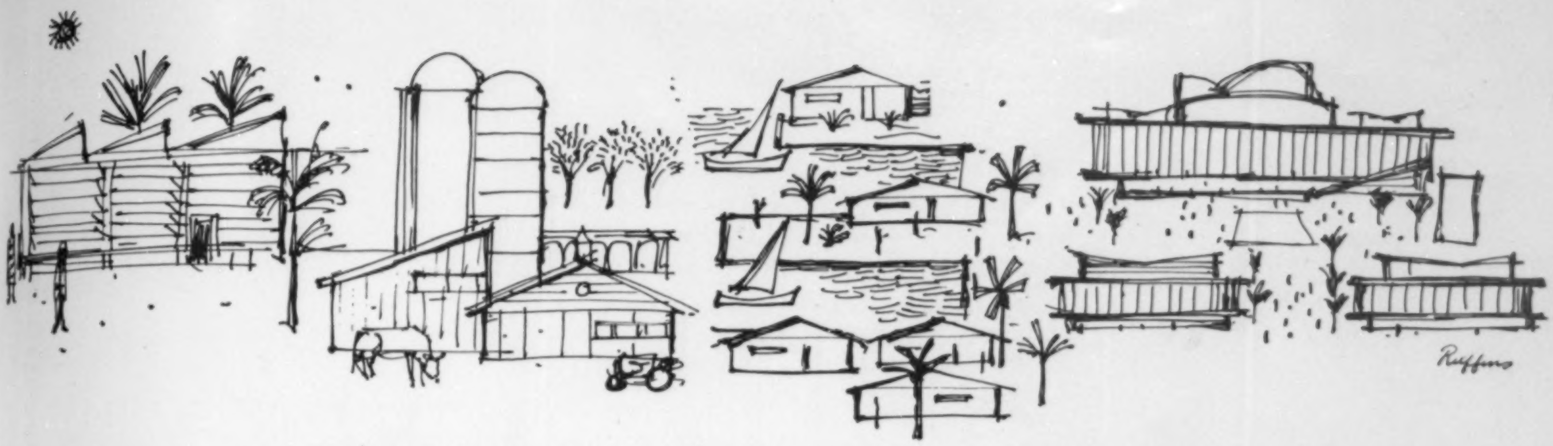
John's Center

The most hotly contested piece of Manhattan territory this season is the west-side crossroads known as Lincoln Square. Involved are such fraught issues as church-state relations (should Fordham University, a Roman Catholic institution, benefit from the city's renewal activities?) and city planning (should an immense cultural facility be located in a marginal area?). Whatever the outcome of the various battles, it is probable the Lincoln Center for the Performing Arts, Inc., John D. Rockefeller 3rd, president, will win out.

John, oldest of the brothers, became interested in the Lincoln Square struggle not as a result of his far-ranging activities on behalf of the Rockefeller Foundation (of which he is also chairman) but rather as a result of the familiar Rockefeller desire to lead the way in reforming a specific environment for which the brothers happen to feel some responsibility.

It is John's hope that the Lincoln Center will give New Yorkers something creative to do with their increasingly abundant leisure time, and an attractive place in which to do it. His goal is considerably more sophisticated than was his father's when the problem of finding a home for the opera was first accepted as a family concern (see box). John D. Rockefeller Jr. merely wanted to contribute the land necessary for the opera (in the same generous manner that he gave the UN the $8,500,000 necessary to purchase its East River site). John 3rd, however, is wrestling with all the problems that must be licked before a modern city building can be built.

As he expressed the center's purpose last month: "We are interested in a new kind of city therapy. Other things have been tried, other methods have appealed to other private organizations." He checked them off on the fingers of his demonstrative hands: "Medicine, museums, experimental housing—each one was the most pressing problem of its own time. But we believe that this is the time for a more active form of help



BELGIAN CONGO TEXTILE PLANT | WINROCK FARM, ARKANSAS | IBEC HOUSING, FLORIDA | LINCOLN CENTER FOR THE PERFORMING ARTS, N.Y.

—a time for art." As a cultural complex, the Lincoln Center for the Performing Arts will include a dramatic theater, a ballet theater, a concert hall (primarily for the New York Philharmonic), a new home for the Juilliard School of Music, and a new Metropolitan Opera House that is expected to be up by 1961. Four buildings have been arranged around the Opera House in a pattern worked out by an international team of advisory architects bossed by Harrison. But $40 million must still be raised before the models become real buildings.

To John the arts as a route to international understanding are almost as important as the arts as a bracer for New York. The foreign culture in which he personally is most interested is the Japanese. Ever since his 1951 trip to Tokyo as advisor to Secretary Dulles, he has been eager to find ways of enriching the cultural contacts between the U.S. and Japan. The physical manifestations of this interest, to date, have been the architecturally outstanding International House in Tokyo, in the planning of which he took an active part, and the projected, Philip Johnson-designed Asia House on Manhattan's East 64th Street, which he is fully financing.

John shares with his father and grandfather the client's knowledge that each building presents its own economic difficulties, its own procession of crises. But he shares with his brothers the more profound knowledge that building can involve a great amount of personal satisfaction. END

How the Rockefellers backed into building.

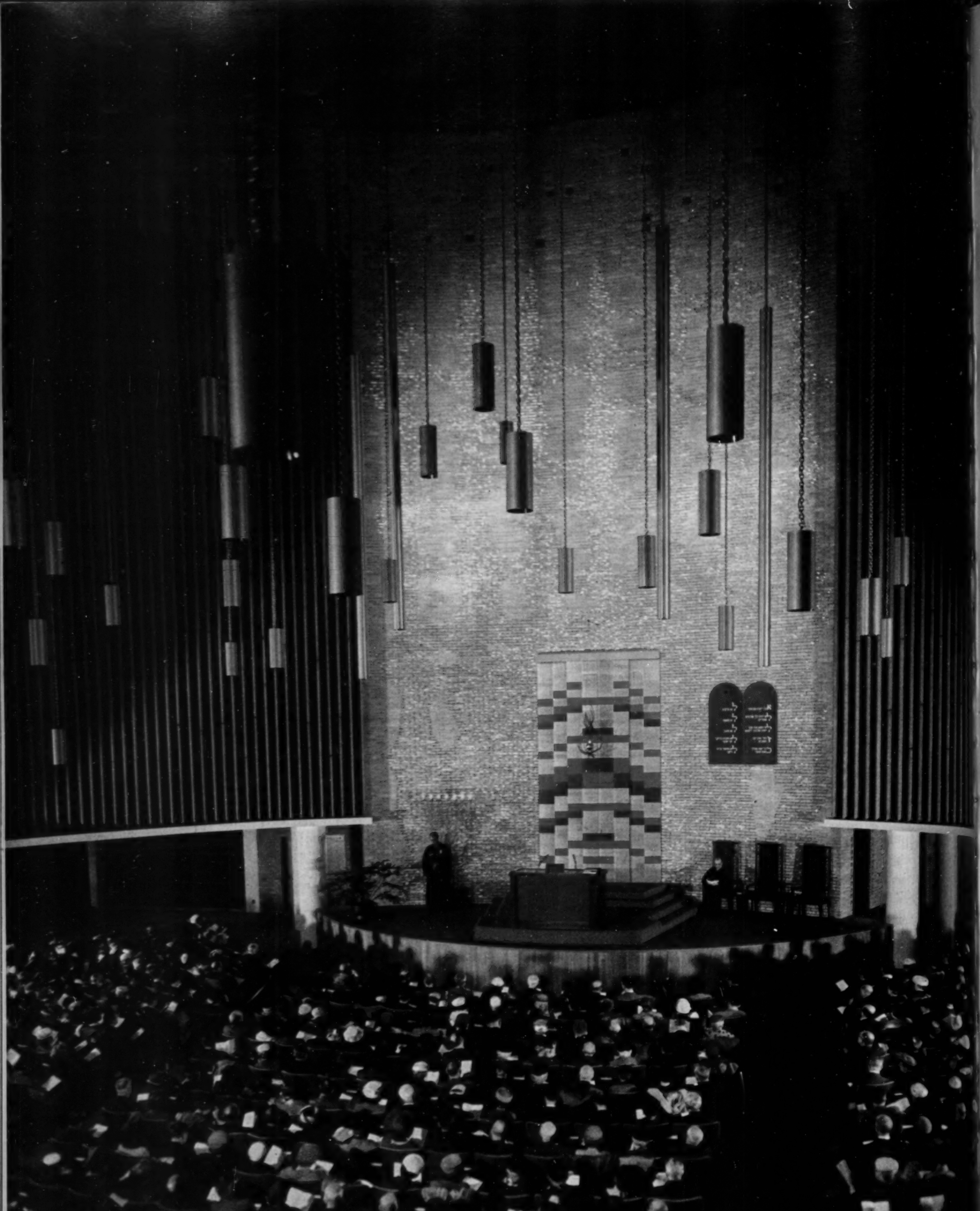
At the time of the 1929 crash John D. Rockefeller Jr., aged 55, was manager of the family affairs. Square-boned, quietly humorous, he was not remotely interested in managing the complex oil structure his father had been able to bolt together during the unique legal and industrial period of 1870 to 1910. But he was passionately interested in making his dollars work efficiently for the humanitarian objectives that had been developed in the Rockefeller Foundation.

The financing of culture was not high on this list of objectives. Consequently, Otto Kahn, gentleman art patron, doubted that he could sell Rockefeller on the idea of joining a group of opera backers in acquiring land on which could be housed New York's Metropolitan Opera. To Kahn's delight, however, Rockefeller was persuaded to become the major underwriter of the project, on the basis of the public good. A large parcel of midtown real estate was then leased from Columbia University for 86 years at $3.3 million a year. That was shortly before October 29, 1929. Thereafter the opera backers disappeared, one by one, looking as frightened as the rest of their countrymen.

Soon John D. Rockefeller Jr. stood rather isolated, in his office at 26 Broadway, debating what to do with the vast plot of land he was left holding. It measured roughly 13 acres, covering the three blocks between Fifth and Sixth Avenues from 48th Street to 51st Street. Each day that he delayed the lease from Columbia University cost him $10,000. He was presented with two equally appalling choices: back out of the lease at a loss of dollars and prestige, or turn it into the most massive commercial real estate and building enterprise the country had ever seen.

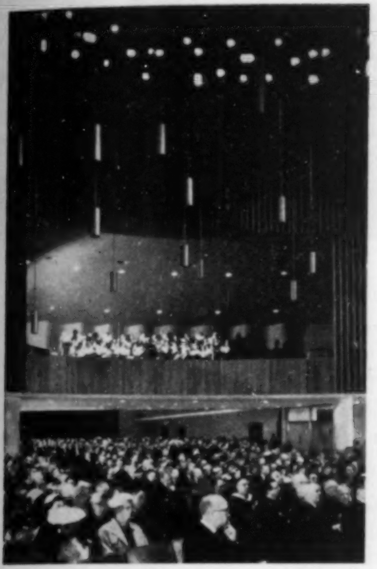
Through a strange kind of philanthropic irony, the wholly commercial decision to take the latter course now stands as one of the Rockefellers' most valuable contributions —not so much in terms of dollars (although Rockefeller Center is worth at least $125 million today) as in terms of influence and general civic benefit.

The decision benefited first of all the building industry, which was the most depressed of any trade in New York. It benefited next U.S. architecture, giving a widely diverse group of "modernists" an early opportunity to show on a larger scale what they had been talking about. And it gave the five Rockefeller boys an unforgettable view of the inside of the building business. The early image of their father was of a building client equipped with his four-foot "golden rule" for checking blueprints, so enthused by the process of construction that he had a bleacher stand put up beside the site for the "sidewalk superintendents club," so determined to make a success of building that he broke a longstanding rule against having the family name associated with bricks and mortar. Rockefeller Center was as thorough an initiation into the building business as could be wished if it had been planned.



A high-domed temple in Texas

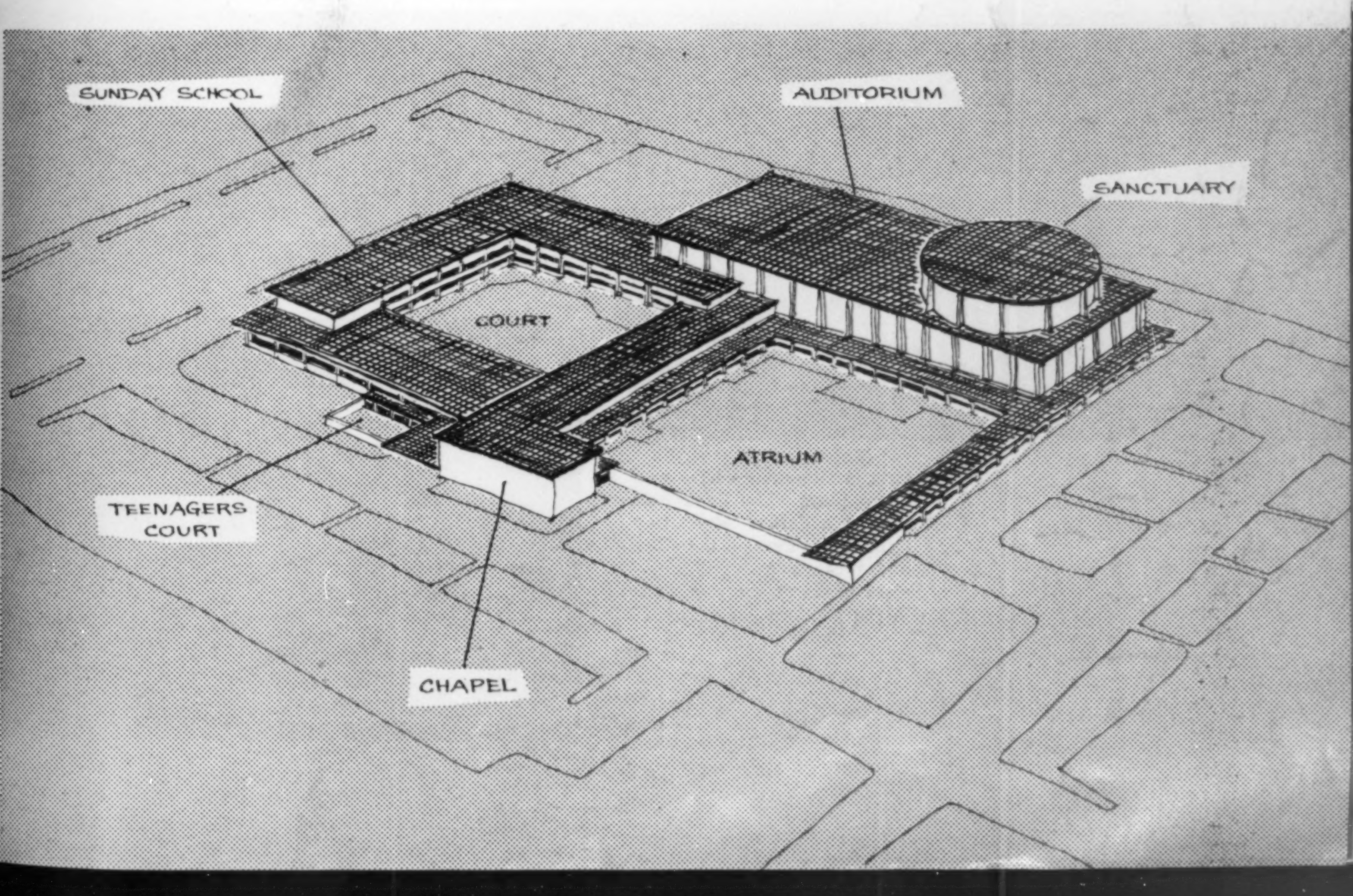
PHOTOS: FRANK SCHERSCHEL—LIFE



Main sanctuary: a gold-flecked wall and tubular lights by Artist Gyorgy Kepes set off an ark curtain by Anni Albers; sculpture by Richard Filipowski. Overflow seating (above) extends back under the choir into the auditorium.

Soaring space and brilliant accents make this Dallas synagogue a striking place of worship.

In a former alfalfa field in the fast-spreading suburbs northwest of Dallas, Texas, members of the new Temple Emanu-El gather to worship in a modern rotunda remarkable for its darkly soaring space and glittering play of art. From curving rows of theater-style seats in the main sanctuary (see photos), worshippers can look up into a huge cylinder 82 feet in diameter where a pattern of slim acoustical ribs rises beyond a random hanging of bronze-gold tubular lamps into mystical darkness above. Higher still—just beneath the 70-foot-high dome—the walls are pierced to admit little stars of daylight (smaller photo). In front of the congregation, a curving wall of warm buff brick reveals the golden, flickering symbol of a giant candelabrum, as light from slots in four 20-foot-long tubes above the rostrum strikes thousands of mosaic fragments of gold, blue, and green



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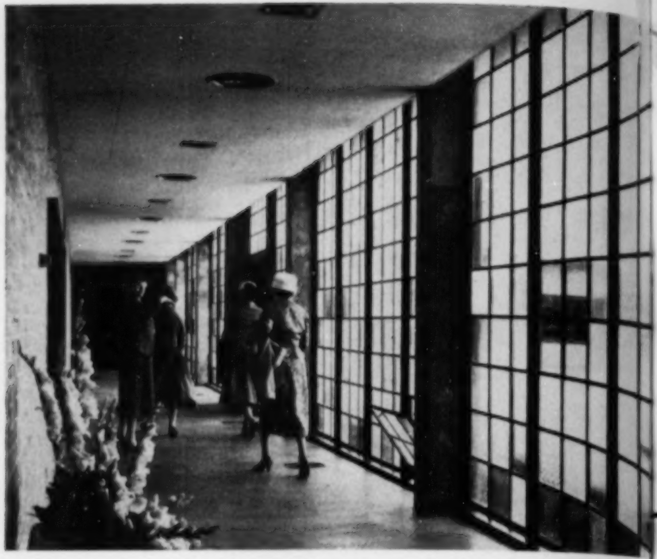


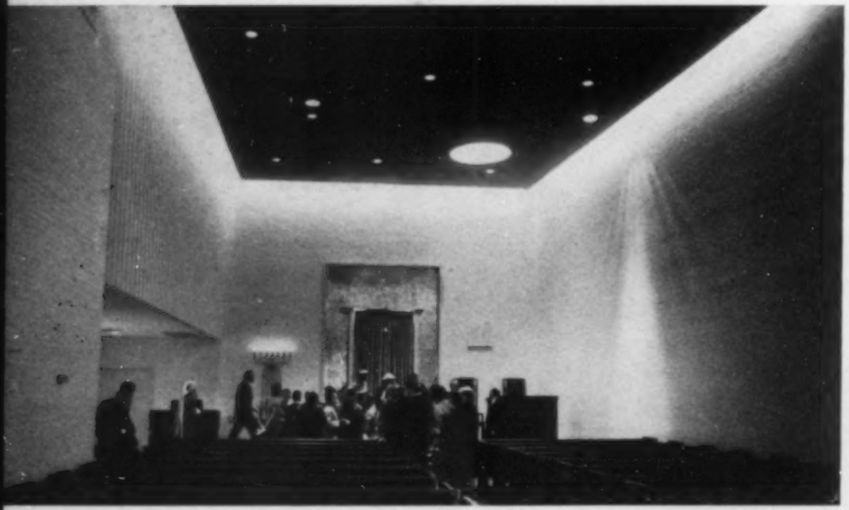
Cloistered corridor leads from the main temple to the chapel, past offices, and library. Clear glass among the tinted and translucent panes gives glimpses of the courtyard.

glass imbedded in the mortar joints between the brick. At the center of this brilliant stage, behind a flame-shaped wire sculpture cradling an eternal light, curtains of bright metallic cloth conceal the ark and scrolls.

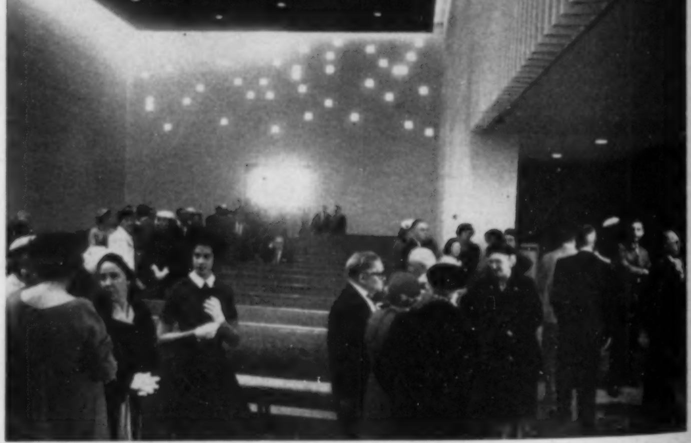
On high holy days, soundproof folding doors behind the 1,000 seat sanctuary can be thrown open to join the sanctuary with an auditorium (see photo, page 93) where banquet chairs, fastened together in rows, will accommodate another 1,000 worshippers. To synchronize sound reception in auditorium and sanctuary, voices from the sanctuary are first recorded on magnetic tape, then fed back into auditorium loudspeakers after a 1/10th second delay. The auditorium is also used by the congregation for meetings, receptions, and dinners, and serves the community as a whole for benefits.

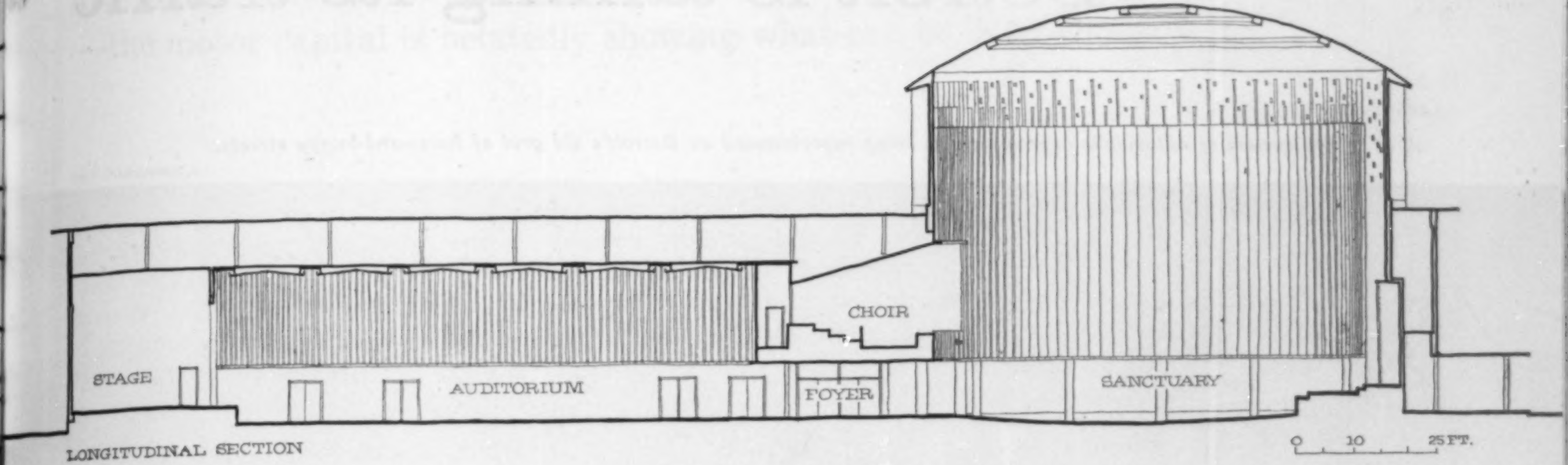
The new temple, air conditioned against Texas sun and dust, and wired for future closed-circuit television, also has a small chapel seating 250 (below); a teen-age social hall equipped with its own kitchen, library, and terrace; 47 Sunday-school classrooms, and parking lots for 650 cars. Construction cost: $1,768,000. END

TEMPLE EMANU-EL, Dallas, Texas
ASSOCIATED ARCHITECTS:
Howard R. Meyer & Max M. Sandfield;
William W. Wurster, consulting architect
CONSULTANTS: Gyorgy Kepes (artwork);
Wayne Rudmose (acoustical);
Richard Kelly (lighting)
INTERIOR DESIGNER: Beth Armstrong
LANDSCAPE ARCHITECTS: Marie and Arthur Berger
ENGINEERS: Frank W. Chappell (structural);
Blum & Guerrero (mechanical, electrical);
J. R. Joiner (civil)
CONTRACTOR: J. W. Morgan & Sons

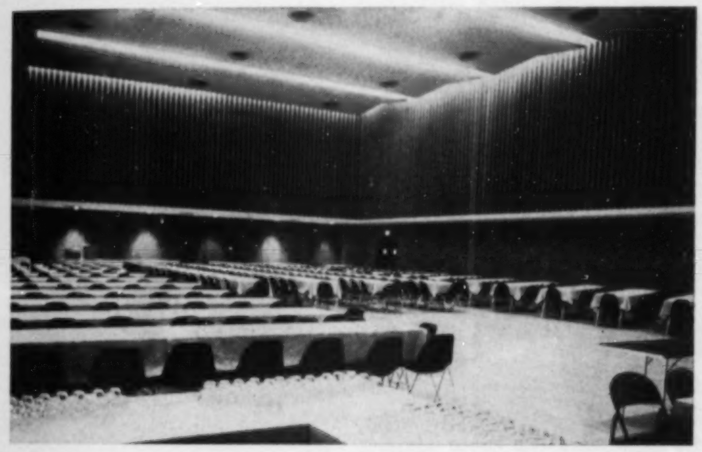


Bright chapel, used for weddings, plays white brick walls against a darker "sky." Daylight enters through the alcove and through a spattering of glass blocks at the rear (seen in the photo at the right).





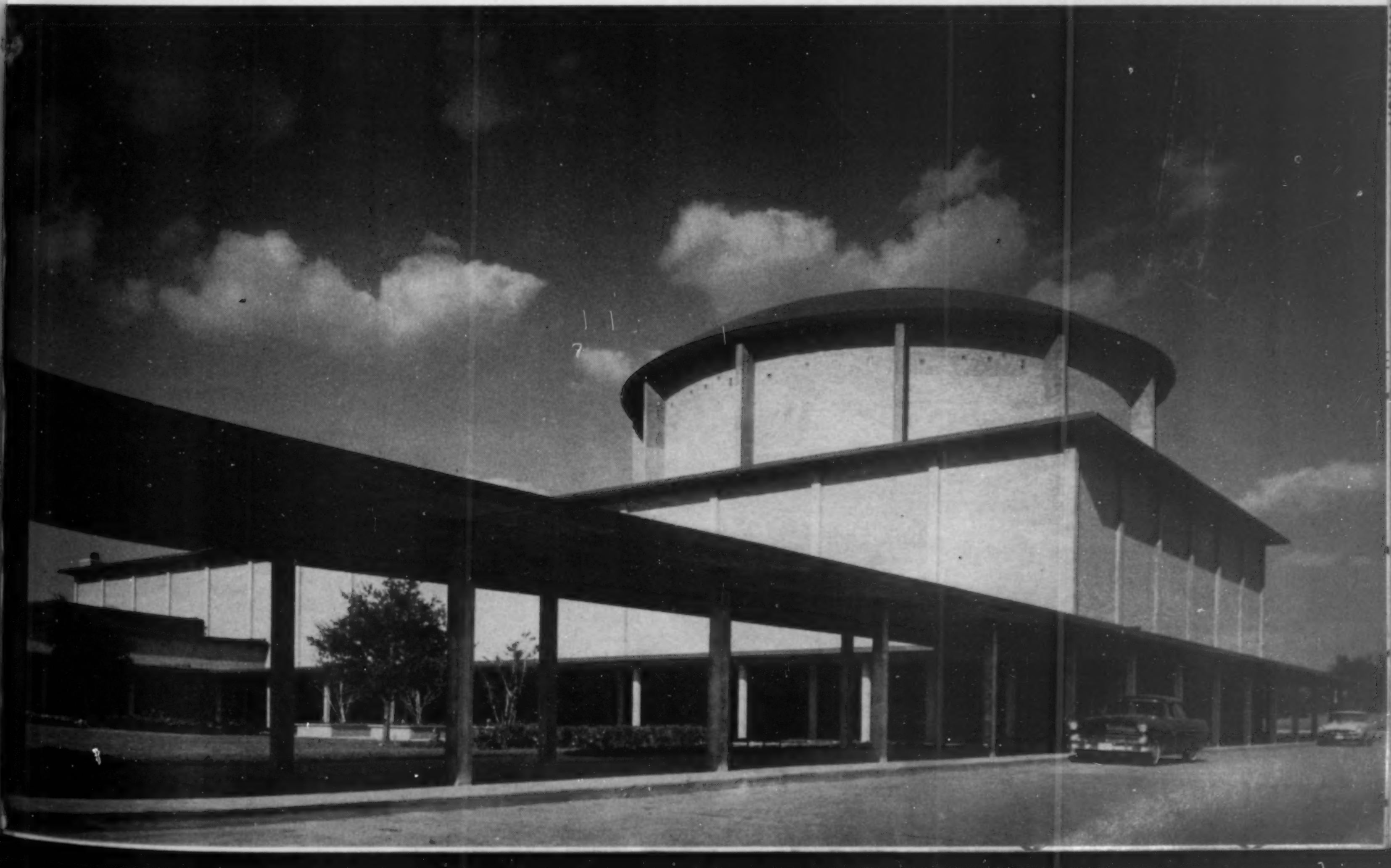
LONGITUDINAL SECTION



Auditorium, here set up for a banquet, repeats the acoustical slatting of the sanctuary, to which it can be opened across a common lobby during special services (see longitudinal section above).

Entrance colonnade leads around a formal Roman atrium that echoes the pattern of early Christian churches. Beyond the colonnade are the buff brick walls of the sanctuary topped by a copper-clad dome of reinforced concrete.

PHOTOS: (BELOW) ULRIC MEISEL—DALLAS; (OTHERS) FRANK SCHERSCHEL—LIFE

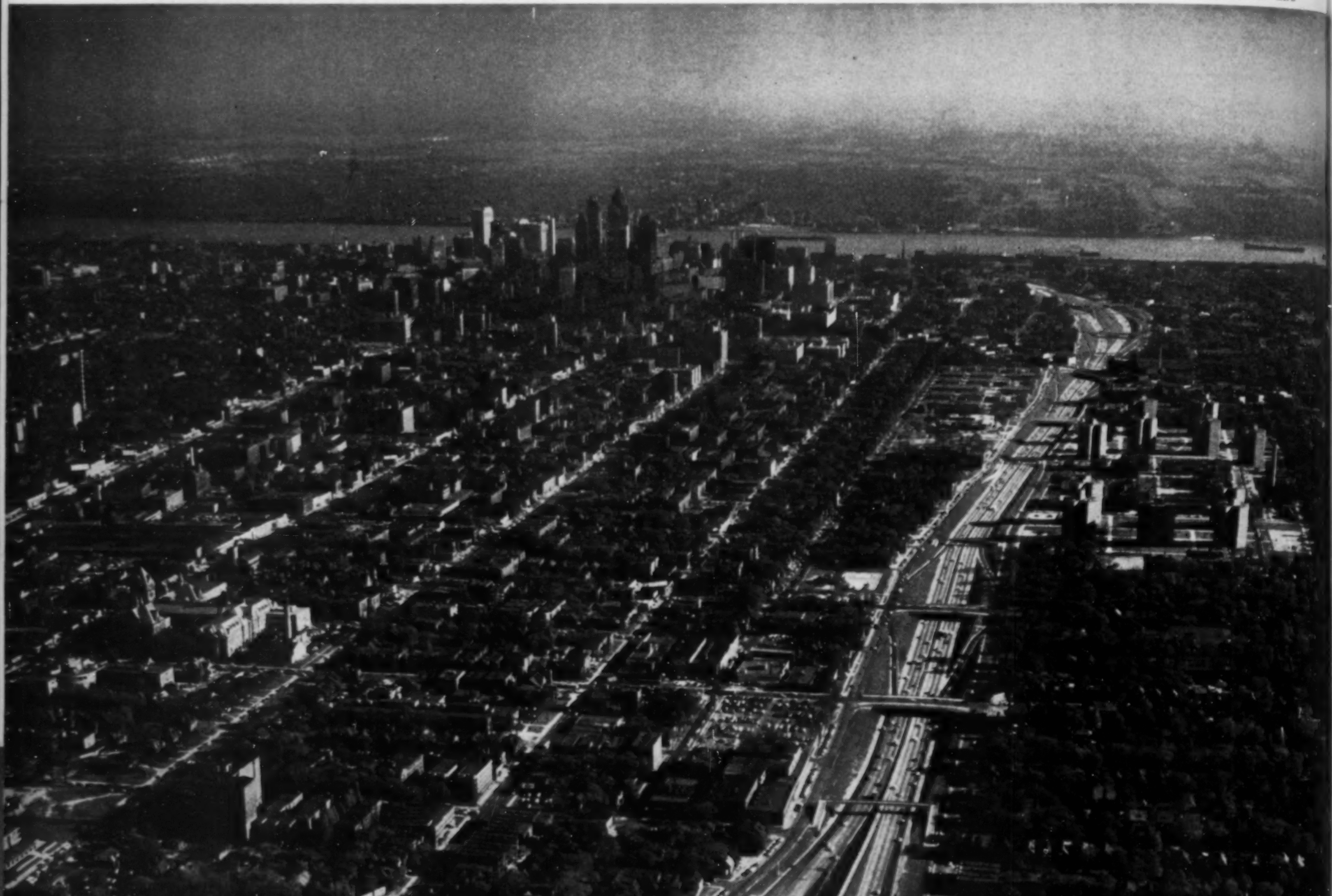


UNIVERSITY OF MICHIGAN LIBRARIES

Detroit is taming its traffic

A $1 billion system of automobile expressways is being superimposed on Detroit's old grid of horse-and-buggy streets.

J. ZIMMERMAN—LIFE



Having created the premier problem of urban living—the automobile —the motor capital is belatedly showing what can be done about it.

BY ROBERT CANTWELL

"Cities," said Henry Ford in one of his typically blunt and pithy pronouncements, "are doomed." In Detroit, where he was then fashioning the instrument for their destruction, the automobile, there was some evidence that he might be right. The immense centrifugal force of spinning wheels, moving out from the automobile capital of the world, was even then, and with increasing force down the years, breaking up the tissue of cities, concentrating heavy congestion and decay at the centers and flinging out an endless sprawl of suburbs and satellites, which in the case of Detroit seemed to spell the city's ultimate doom.

But in Detroit today there is a vision, supported paradoxically by Henry Ford's descendants and by a broad mixture of motor, labor, business and civic leaders, that the city can be made whole again. It is as good an illustration as any of history's countervailing forces. The vision is nothing less than the complete rebuilding and rehabilitation of Detroit into a new kind of industrial metropolis. It is contained in a mammoth program, some $700 million of which is already financed and scheduled, with more to come, which authorities in the field regard as a model of large-scale urban renewal. There are hazards in describing any vision, particularly in hard-bitten Detroit. The execution may never come up to the ideal. But the nub of Detroit's vision is expressed by its City Plan Commission's dynamic director, Charles A. Blessing, who, with a staff of 93 and a budget of $600,000, among the country's largest, says: "Detroit brought to civilized man a new freedom of movement, and Detroit, of all cities in the world, has an obligation to free the city from the shackles of mechanical strangulation."

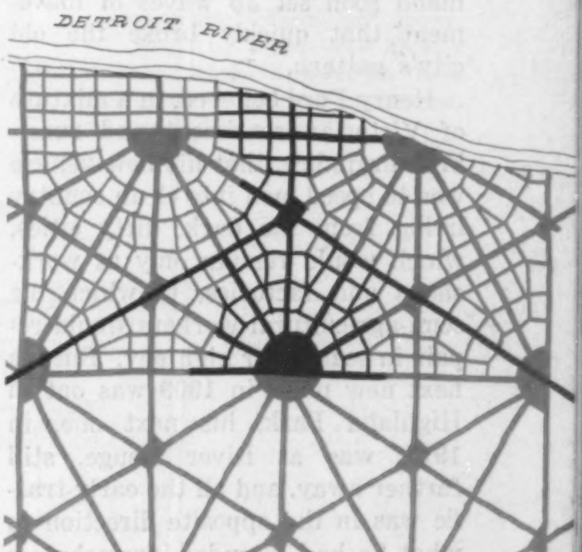
Most of this strangulation began in Detroit, hence the issues of a city's life or death are met here in sharpest historical perspective. Out Woodward Avenue in 1909, on a plot now marked in Palmer Park, was laid the world's first 1-mile stretch of experimental concrete highway, since grown to the hundreds of thousands of miles around the earth. Also out on Woodward at Highland Park stands the neat red-brick factory, where in 1913 Ford put his Model T on the first moving assembly line, another sinuous innovation that has found its way around the world. Detroit established the first traffic control bureau, years before New York or other great cities even had a traffic department; it built the first public garages, the first automobile expressways, and in a dozen other lesser but significant ways ushered the cities of the world into the progress, promise, and turmoil of the automobile age. And as this city struggles in the congestive toils of its own creation, nowhere wholly solved on contemporary terms as yet, its vision and example may be suggestive to other cities struggling with the same premier problem of urban living. On Detroit's terms, as on the others, it is a struggle between past and future, and how to forge the living links.

Pattern of the past

Detroit was first a fort and then a river town, set down in 1701 by Antoine de la Mothe Cadillac on the broad Detroit River, connecting the Great Lakes, to command a wilderness. France lost the wilderness, but there grew up on this strategic confluence of waters, first under British, then under American rule, a thriving little port and manufacturing town, unified and diversified in the slow pioneering life and trades of the day. By 1886, just before the coming of the automobile, Charles Glaser found it, in his *Peculiarities of American Cities,* among the most beautiful on the continent, a city of "half-acre parks and broad avenues bordered with thrifty elms and maples," spacious, wealthy, elegant, with an English provincial air.

The successive waves, ebb and flow, of Detroit's growth may be viewed then as from a great height. In 1805, just a century after its founding, Detroit had been burned to the ground, and there appeared on the scene Judge Augustus B. Woodward, who proceeded to imprint on the city the central street plan that it bears to this day. An eccentric and a Jeffersonian more doctrinaire than Jefferson, Judge Woodward was no ordinary judge but an autocratic ruler in Michigan Territory for 19 years. The plan he drew up for charred Detroit is said by some to have been inspired by L'Enfant's broad-avenued, wheel-shaped plan for Washington, by others to have been based on Constantinople. But, whatever it was, it turned out to be not quite like anything else on earth. Its pattern of hexagons (see plan below) was formed by long, wide avenues ex-

Woodward's plan for Detroit (below) arranged major streets to form large triangles and hexagons subdivided by minor streets which created many smaller odd-shaped blocks. Although the pattern was to be repeated up and down the river front, only that part of it shown in black was carried out; Woodward Avenue is the central vertical line running to the river.



UNIVERSITY OF MICHIGAN LIBRARIES

tending in three directions from the river front. Over all was placed a tight, small grid of streets, roughly parallel and perpendicular to the river, which formed a multitude of small, triangular parks where grid and diagonals sharply intersected. This same pattern was to be repeated up and down the river front.

This was a plan for a pedestrian city, for what Buckminster Fuller (see page 121) has gracefully called "the horizon-walking man," bounded in his lifetime by the distance he could walk. In Detroit, as elsewhere, when the automobile began to appear in some numbers, the city's converging angles and sharp midtown corners, never planned for such independent, fast-wheeled vehicles, soon clogged. Detroit not only had to struggle with the automobile but with the growing industry that was to build it. Industrially, the city had grown up in the close, diversified pattern of the previous century, characterized by steam-engine factories, stove foundries, shoe companies, organ works, railroad-car and steel-rail plants, plus innumerable carriage and machine works, all strung along the river or close into town. It was primarily a machine shop town. And the first automobile factories were little more than machine shops, a handsome example being the old Packard plant of 1903, still standing, a masterpiece of its day. But growing demand soon set up waves of movement that quickly broke the old city's pattern.

Henry Ford believed, in a mixture of Victorian sentiment and rural-bred prejudice, that his new vehicle was to speed men into clean country living from the dark, dirty cities, which would remain only as workshops and factories, to which his semi-agricultural workers would repair in season for high pay. But his next new plant in 1909 was out in Highland Park, his next one, in 1917, was at River Rouge, still farther away, and all the early traffic was in the opposite direction to what he had intended, from homes in the city to new plants on the outskirts, miles away. As the industry grew larger, and city congestion with it, General Motors in 1919 began a decentralization movement with a commission to Architect Albert Kahn, builder of many of the earlier automobile shops, to design an immense office building and business complex out Grand Boulevard 2 miles from the central city. And Kahn, designing offices and plants hand-over-fist for all the auto makers in the twenties, adapted reinforced concrete construction to the sprawling, clean, one-story factories that efficient automobile assembly required—a style that set an industrial standard for the world—putting them still farther out in the country to get the needed acreage.

To leapfrog the growing congestion and distances from city to plants, workers began to move as Henry Ford had envisioned, out to mushrooming suburban subdivisions around and beyond the new plants. And the new roads marched out, Three Mile, Seven Mile, then Ten Mile Road. But this was not the semi-rural idyl Ford intended, either. It was a thin extension of city in road towns and suburban dormitories, soon inundated and made bleak by the city's mazda and neon glare. In the most ironic reversal of all, the new city was filled mainly from the farms, by lumberjacks' sons from the slashed-over Michigan woods, field hands from the South, farm boys from the great heartland, and immigrants from Europe, a polyglot population that passed well beyond a million by 1929 and hardened in the Great Depression into the sit-down strikers and militant labor of today.

Under these tides, Judge Woodward's old city all but disappeared. Most of the small parks downtown long since had been built over. The river was lost to all pedestrian view by a dark clutter of neo-Georgian, neo-Aztec, neo-functional skyscrapers, built by Kahn and others on the maze of small angular blocks downtown, where congestion and blight were soon to cause a precipitous 40 per cent drop in values during the next 20 years. The city sprawled out, as Woodward never intended, from the blighted square-frame houses of the old city, largely Negro now, through the middle-aged, graying suburbs, vast and petering out at the fringes, to the newest products of the subdivider's art, light and unsubstantial as scuds of foam far out on the Michigan farmland. And over all, like fish eggs of iridescent hue, were the glittering, aggregated cars, filling the streets, covering vacant lots, piling up on downtown roofs, in jellied masses, surrounded by their own environment of luminous signs, little flags, whirligigs, jukebox pumps—the automobile age.

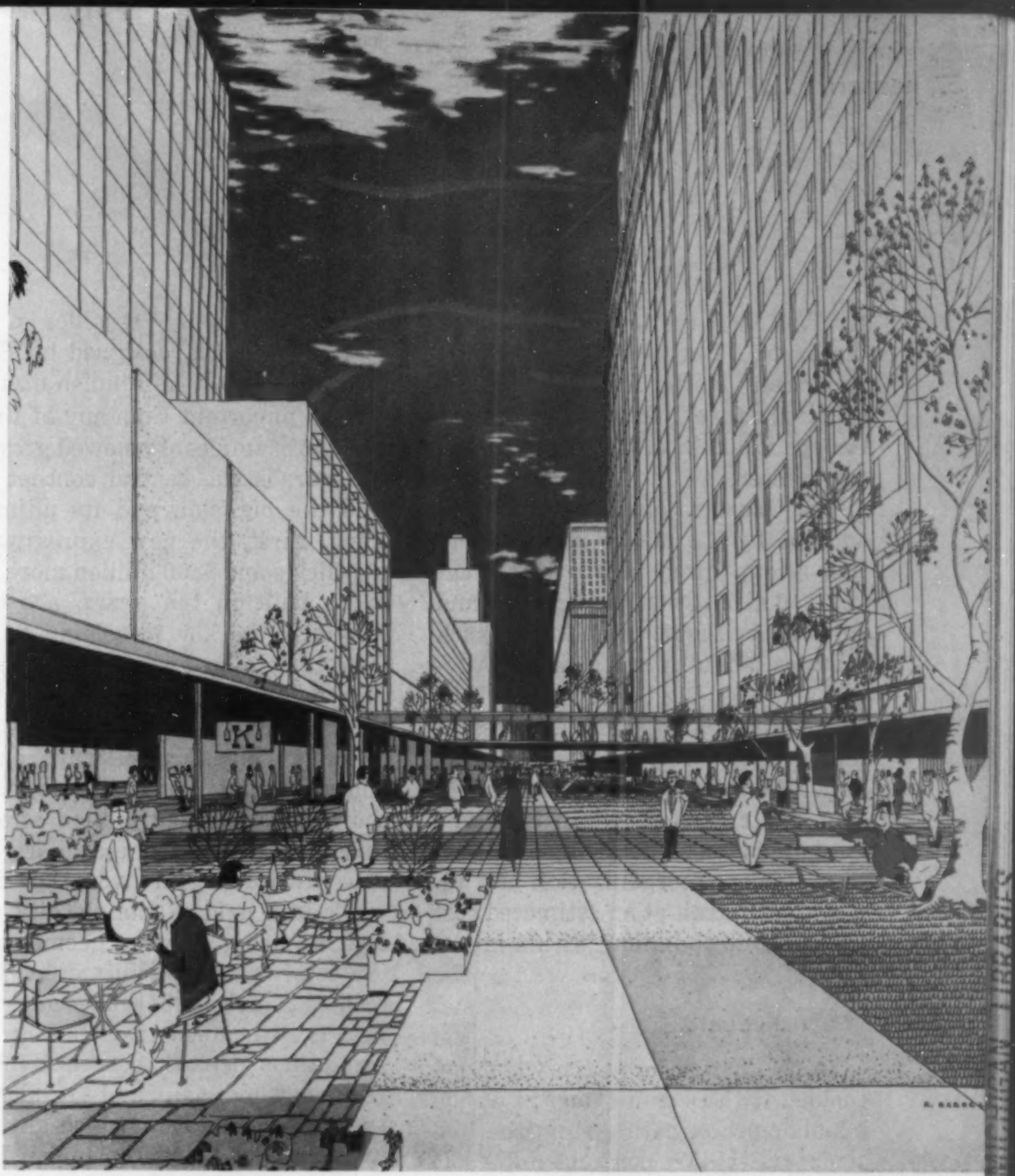
Men of vision

Throughout all this there was a raw vigor, a building country, and some of those counterbalancing forces that always appear to leaven the mass. In 1924, at the invitation of the head of University of Michigan's architectural department, Dr. Emil Lorch, the great Finnish architect and town planner, Eliel Saarinen, father of Eero, came to the Detroit area to remain until his death in 1950. He was not in residence two years before he had a commission from Detroit to study the river front as a site for a memorial hall. Saarinen had immediately fastened on the river as the focal point of Detroit's historic site and design, and he proceeded to propound broad-scale plans which would reopen Judge Woodward's canny corridor from Grand Circus to the river by regrouping buildings in a civic center to enhance the vista. These plans came to nothing, the time was not yet, but they planted a seed for the future.

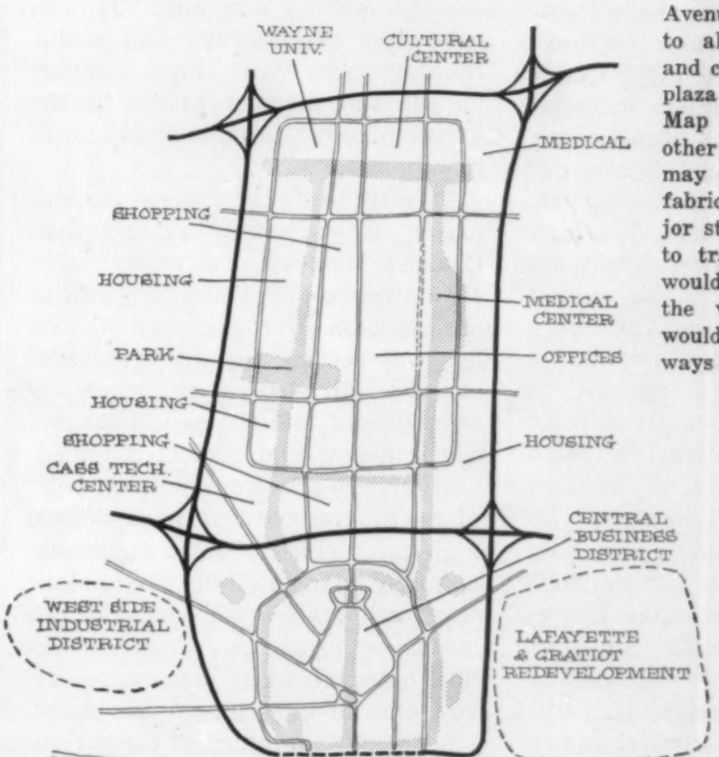
Saarinen remained to become a quiet but living force in whatever architectural renaissance Detroit may have. He was retained to do design for the Cranbrook Foundation, sometimes called "the most beautiful cultural center in the world," a complex of schools, art institute, gallery, and science museum on 300 landscaped acres in Bloomfield Hills, built by George G. Booth, publisher of the *Detroit News*. At Cranbrook he set his classes in city planning the problem of Detroit, stressing zoning, the coordination of city units into functional spatial enclosures, creation of distinct and defined neighborhoods, both residential and commercial, divorced from through-traffic.

Through most of this frustrating period, Detroit's chief city planner was Walter Blucher, an able man who could do no more than keep channels open to the future. In 1931 he wrote, in a reflection on the hardness of the times: "At best we can today lay such a foundation for our growth as will make it possible for future generations to develop our city . . . a city of parks and open spaces, with freedom of movement—and not a city which in our own time is already dying of its own immensity."

It took a long depression and a long war before the situation became so intolerable that the living forces could break through. In 1950, Mayor Albert Cobo and the Common Council adopted a new Detroit Master Plan, worked over for nearly a decade and pushed by Cobo, an ex-candymaker who went into politics and who believed that the times and the civic spirit were ripe for reordering Detroit's vast planless growth. In 1953, the City Plan Commission got a new director in Charles Blessing, a tall, earnest, architectural and planning graduate of M.I.T., who had jumped into city planning from school by successfully showing how to move a small New England town out of the path of a river dam development. (He was then serving on the New Hampshire State Planning and Development Commission.) In 1954, Mayor Cobo, who was to die three years later of a heart attack, reactivated the Detroit Tomorrow Committee, self-organized to promote the city's 250th anniversary in 1951, a roster of over 200 active civic leaders headed by Detroit Edison's Walker Cisler and Detroit Bank & Trust's Selden Daume, and Ford's John Bugas, Detroit Bank & Trust's Joseph Dodge, National Bank's Charles Fisher, Ford's Benson Ford, General Motors' William Hufstader,



Detroit tomorrow may look like this. Among the city's boldest plans is one to close the river end of Woodward Avenue (Detroit's main street) to all but pedestrian traffic and convert it into a shopping plaza and promenade (above). Map at left shows 1) how other park strips (gray areas) may be woven into the city's fabric, 2) how only the major streets would remain open to traffic—others, not shown, would be closed—and 3) how the whole downtown area would be bounded by expressways (dark lines).



K. T. Keller (retired chairman of the board, Chrysler Corporation), American Metal Products' Frederick Matthaei, American Motors' George Romney, J. L. Hudson's Foster Winter.

The master plan having been adopted by the Mayor and Council, this group proceeded with great vigor to give it that public focus and support without which all such schemes languish and vanish. Altogether, this big civic group, the City Plan Commission, present Mayor Louis Miriani, who served under Cobo and is pledged to continue his crusade, have in their vision an extraordinary undertaking, the complete reorganization and renewal of Detroit at an estimated cost of well over $3 billion, with a target date of 1975.

The vision unfolds

In the last seven years, which coincided with Detroit's longest period of labor peace, dating from the historic GM-UAW contract of 1950, the building of Detroit has been phenomenal, but it is only a beginning. Included in the projects completed or nearing completion, both inside and outside the big plan, are: a $200-million ring of two new superexpressways; a $27-million City-County Building of exotic stone and marble, which Detroit has been talking about building, through fights, delays, and scandalous connivances, for years; a $6 million Veterans Building, first of a new downtown Civic Center's units; a $5 million Ford Auditorium, another Civic Center unit of blue and white marble with an underground garage, to which the Ford family and company contributed $2.5 million; a $42.5 million Convention Hall on the same site, most of its funds raised by public subscription, a building big enough to house ten of Detroit's largest structures, including Briggs Stadium; a Greyhound Bus terminal near the new City-County Building; and, independent of the plan but another industrial architectural first that is setting a pattern for the world, the $100 million G.M. Technical Center just north of the city, the new Versailles of industrial research, designed by Eero Saarinen, son of the Finnish master.

More important than any of these massive examples of renewed growth, however, is the central concept behind the big plan and its ultimate scope. First, the new expressways, of which some $800 million more are to be built in ten years, are conceived as the key to solving finally Detroit's traffic-flow problem, which such palliatives as street widening, one-way ordinances, and the like can no longer solve. Expressways, plus a wide cross-hatch of improved major thoroughfares ($40 million already invested), will be placed as a giant new freeform grid over the tight waffle-iron grid of the old city pattern to bring flowing geometry to the solution of cars in motion. Second, this new superimposed traffic grid is so planned that its large intersections demark coherent industrial, commercial, and residential areas in the old city, which are now in process of being replanned, reorganized, or redeveloped as human-scale units, with trees, grass, pedestrian walks free of the immense disruption and disorganization of through traffic (plan, page 99). The encircling expressways and major thoroughfares will then provide logical and discreet access to the space-spanning benefits of the automobile age.

"We are using the expressway and major thoroughfare plan," says Charles Blessing, "as the major structural element in the official master plan of the city. . . . The highway becomes a positive and creative design element in urban redevelopment and the pedestrian becomes a new and respected consideration." To achieve this, the master planners from the start have worked highway planners, traffic engineers, and city planners into a close-knit team, cooperative and aware of one another's problems. Basic traffic-flow data gained by exhaustive survey, plus all data on land use, blight, and the like contained in the various technical volumes of the master plan, are rapidly being converted by the City Plan Commission to IBM cards to be kept up to date and processed by electronic machines so that the flow and direction of Detroit's future development may be closely watched. This approach and the technique of city planning it embodies are perhaps the major points for other cities to observe in Detroit.

In this scheme, the demarcated areas of the big grid become the focus of redevelopment. Ten such areas are marked out for major redevelopment in or on the periphery of the downtown central city. They include the Civic Center, a cultural center, a medical center, three business districts, two large housing projects, and one for light industry (Model photo, right. The first to be completed will be the Civic Center, which, with its veterans' building, auditorium, and convention hall, fulfills in part Eliel Saarinen's vision of a broad pleasance straddling Woodward Avenue at the river front. While this one development by no means solves the central city problem, Hudson's Foster Winter, plain-spoken vice president of Detroit's largest department store, which in 1951 broke from its downtown bastion to establish two of the most notable suburban shopping centers in the U.S., Northland and Eastland, says that the near completed Civic Center already has inspired some $100 million in private building in the district and has refocused attention on downtown.

The second of the major redevelopment areas, now well started after some mishaps, is situated east

→

Downtown Detroit will be divided into major redevelopment areas by the new grid of expressways and existing thoroughfares. Some of these are shown on this model of the south end of the downtown area:

A. Civic Center
B. Central business—industrial, commercial, and utilities
C. Central business—"Woodward corridor"
D. Central business—institutional
E. Medical, educational, and research buildings
F. Lafayette and Gratiot residential areas
G. Freight and passenger terminals for lake vessels.

of the Civic Center on some 130 acres of slums, acquired by the city in 1951 for over $6 million. This is known as the Gratiot project, a housing development. After a private developer who held an option on the project let it expire in 1954, a committee to revitalize it was formed, which, in addition to business and political members, had the distinction of having UAW President Walter Reuther on it, the first major participation by labor in city development. The committee came up with a plan for mixed high-rise and single-unit dwellings, worked out by Architects Victor Gruen, Minoru Yamasaki, and Oskar Stonorov, who conceived a fully integrated community, proportional in all racial elements to Detroit, for all income levels. The job of developing it was finally taken on by Herbert Greenwald, with the proviso that he could have Mies van der Rohe as architect, and the precise geometry of the latter is now rising on the site.

The third redevelopment area abuilding is a cultural center out on the edge of the central district around Wayne University. Wayne had a small campus behind the Public Library, one of the finest in the country, built by Cass Gilbert. Beside the library stands a new Historical Museum, built in 1950, and across from it on Woodward, Detroit's Art Institute. After the war, Wayne became so crowded that classes were held in 80 converted residences; new building became imperative, and the project was taken into the city's redevelopment program with designs by Yamasaki and others to make it an integral city educational and cultural center.

Such is the main outline of the three major redevelopment-area projects now well underway or nearing completion in downtown Detroit. Of the ten such areas now projected, the last to be started will probably be a ten-year, $31-million indus-

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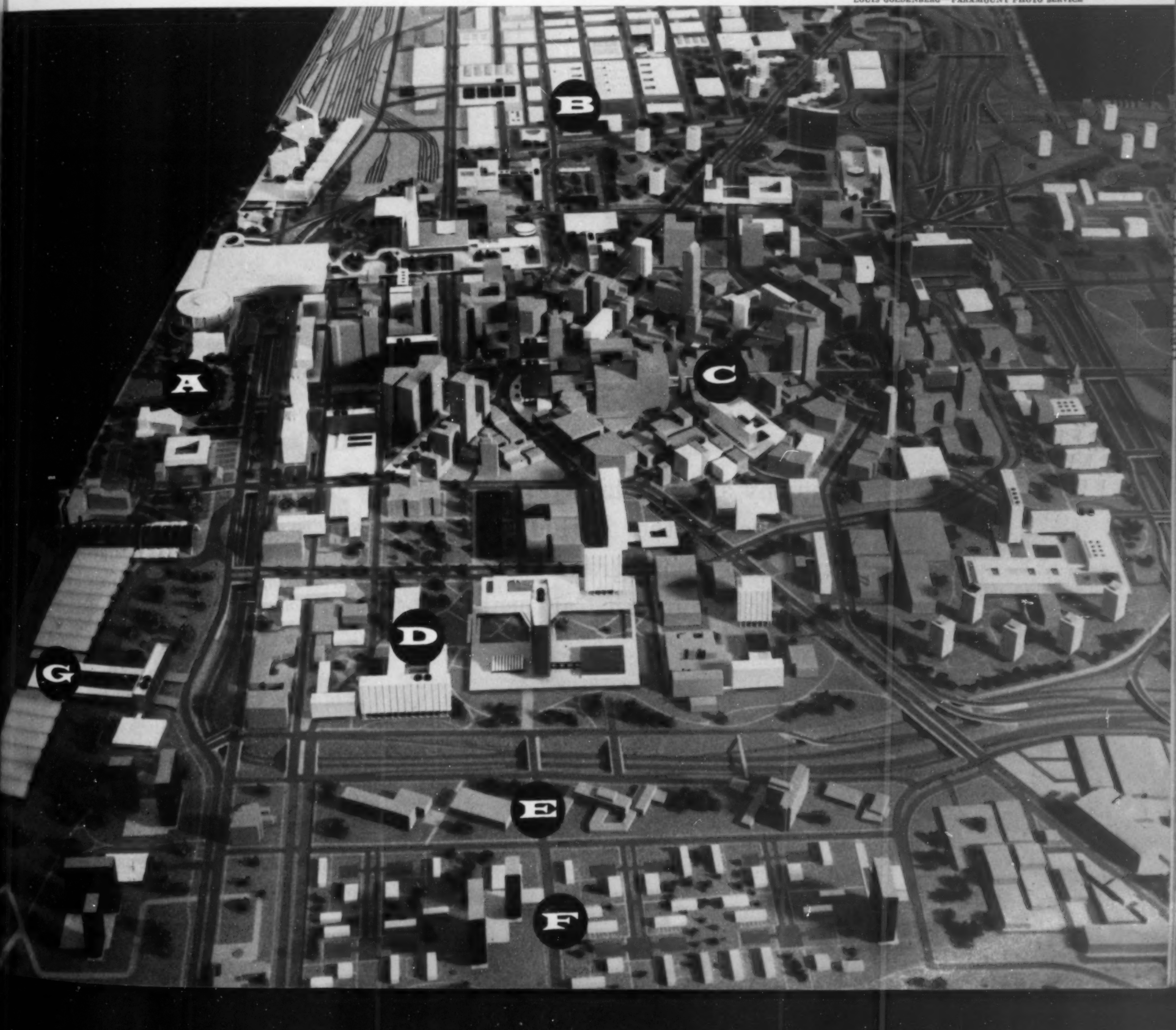
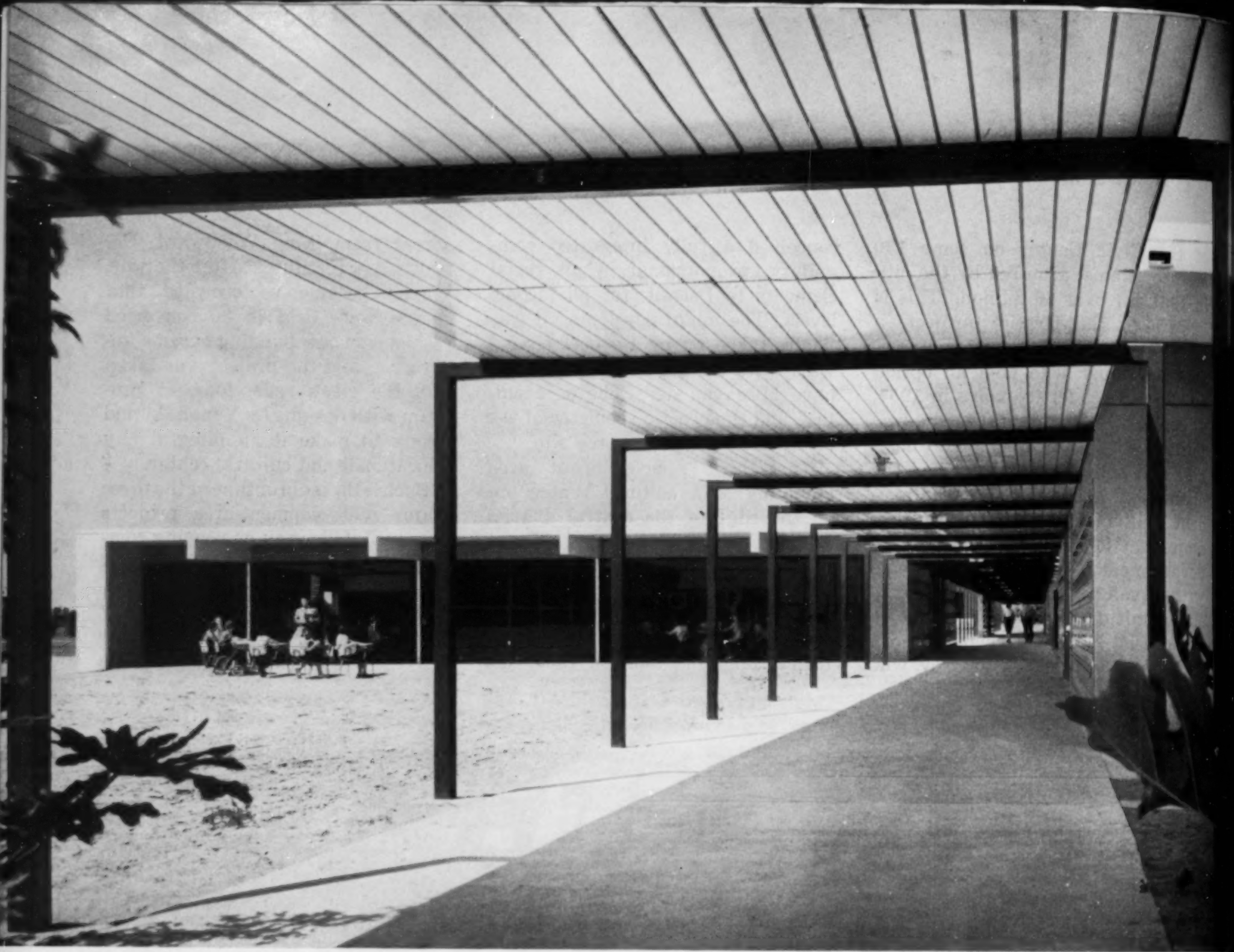
LOUIS GOLDENBERG—PARAMOUNT PHOTO SERVICE





House-size clusters of classrooms are alternately spaced along the long covered walkway.

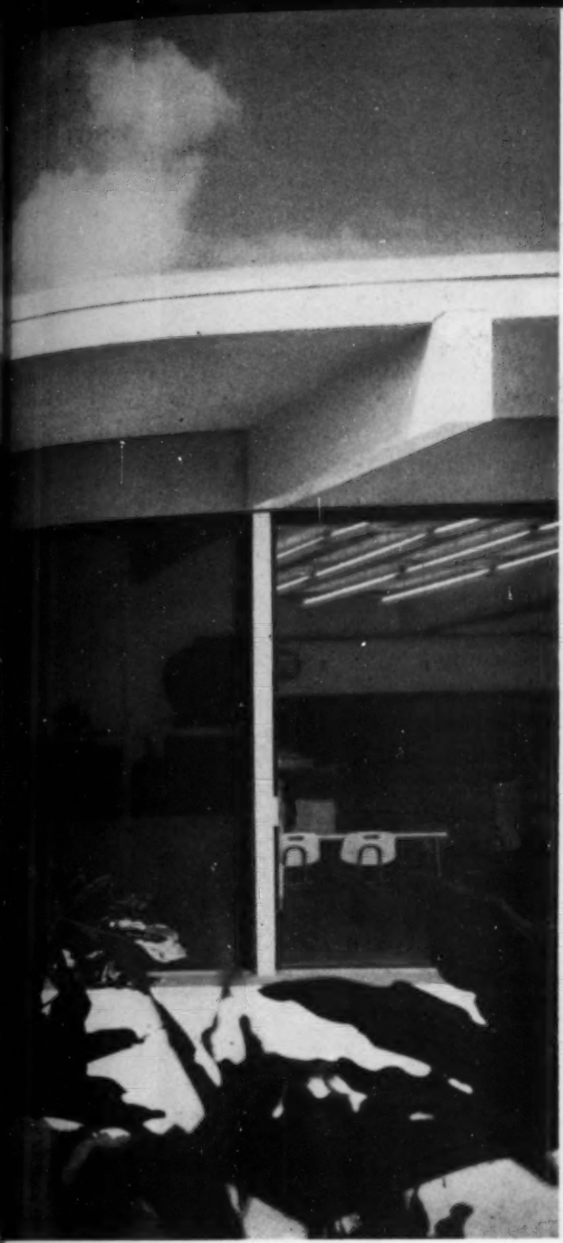
Classrooms in fours

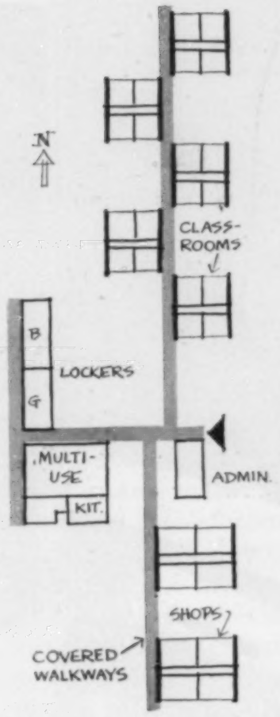
Tight economy and spacious architecture go together in this school for seventh- and eighth-graders in fast-growing southern California.

At first glance, this school in Orange County, California looks expensive. The widespread cluster plan, the sliding glass walls opening on outdoor courts, the special facilities for shop, home economics, and music courses, the plush, multi-use cafeteria-gym-auditorium with its own outdoor dining terrace—all these seem to be expensive frills.

Actually, the school is built of simple, common materials and has details more typically associated with contemporary residential construction than with school building, and the cost of the facilities is impressively low (summary, page 104).

The truth is, Alamitos Elementary

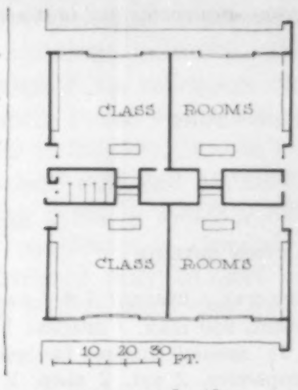




ARCHITECTS: Richard J. Neutra & Robert E. Alexander.
ENGINEERS: Parker, Zehnder & Assocs. (structural), Boris M. Lemos (mechanical) Earl L. Holmberg & Assocs. (electrical)
LANDSCAPE ARCHITECT: Bettler Baldwin
GENERAL CONTRACTOR: Noyes Roach Co.

PHOTOS: JULIUS SHULMAN

Four classrooms in a group open to courts between the clusters.



-for economy

School District, for whom Architects Neutra and Alexander planned this school, cannot afford extravagance. Five years ago, the district was largely a land of bean fields and orange groves. Then the tract developments pushed south out of adjacent Los Angeles County. Today, much of the district lies within the newly incorporated city of Garden Grove; population: 57,000. And to the school board, a discouragingly large proportion of the population seems to be of school age.

Because it was already bonded to the limit, the district obtained construction money for the new school from the California state-aid program, which provides loans at a current interest rate of 2.3 per cent to financially exhausted districts. If the loan cannot be repaid in 30 years (for classrooms) or 40 years (for community facilities), the state crosses the debt off its books.

At the Alamitos Intermediate School (seventh and eighth grades), the house-size clusters of four classrooms each are set close to the street, on the other side of which is the inevitable row of ranch-style houses. From the main entrance adjacent to the administration suite (plan, above), covered walkways lead to five clusters of academic classrooms, the shop and home-economics rooms, and the multi-use cafeteria-gym-auditorium.

Much of the economy—and amenity—of the school is derived from the cluster plans. In each cluster, four classrooms surround a utility and storage core. Low (8½-foot) ceilings are made workable by the egg-crate-baffled, fluorescent ceiling lighting, which spreads light evenly despite the low height.

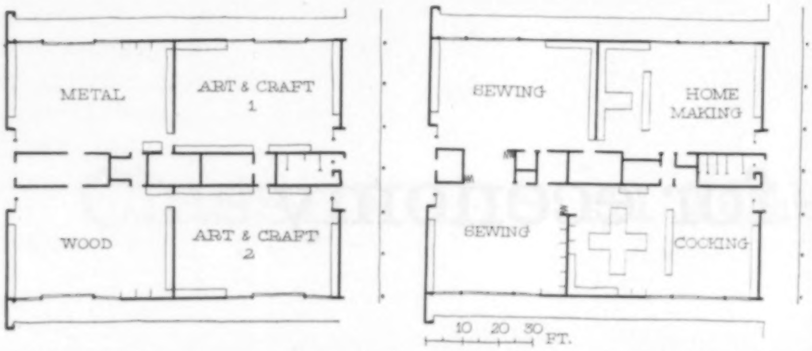
Under the average state building code, many of these features would not be allowed. But California's liberal code encourages the building of good schools for a minimum amount of money. For construction details and costs, see the next page.

UNIVERSITY OF MICHIGAN LIBRARIES

Home economics rooms are in a separate cluster and can be joined by means of fold-back wood partitions.

CONSTRUCTION OUTLINE

SITE: 23 acres / **GRADES:** 7-8 / **CAPACITY:** 736 present, 950 max. / **SPACES:** 14 classrooms, 14 special rooms (4 science, 4 home economics, 2 art, 2 shop, 2 band), library, administration suite, multi-use cafeteria-gym-auditorium, kitchen, locker, stage / **FEATURES:** open corridors, 4-cluster classrooms, outdoor classrooms and stage. **CONSTRUCTION:** grade beam foundations, concrete slab floors / stucco on wood stud walls, dry-wall and plywood interior / wood joists on laminated wood beam roof (classrooms), steel deck on bolted steel-frame roof (multi-use area) / tar and gravel roof / unit gas furnaces.
COSTS: building, $918,721 / land, $114,350 / site development, $102,542 / equipment, $26,883 / fees, $97,493 / **ENGELHARDT COMPARISON FIGURES** (adjusted to 1949 building costs and to regional and community variations, see **FORUM**, November 1957): gross square feet, 65,222 / adj. cost per gross square foot: $8.31 / net square feet: 41,262 / adj. cost per net square ft.: $13.13 / adj. cost per pupil: $637. END



Wood shop, like other shop rooms, has a general work area and an alcove

What should Congress do to encourage housing and urban renewal? Here are FORUM's recommendations.

A sound housing policy–now

THE BASIC GOALS

A national housing policy, FORUM *believes, should provide adequate housing and necessary community facilities for families of all income groups, all races, all age levels. Such a policy should specifically encourage:*

- *Rental housing as well as purchase housing, both in the suburbs and in the central cities.*
- *Slum clearance, slum prevention, and neighborhood conservation and improvement projects.*
- *Urban renewal and redevelopment projects, both residential and nonresidential, that will make the best social and economic use of blighted but intrinsically valuable city areas.*
- *Desegregation: the avoidance of racial patterns which concentrate minorities in "ghettos" within the city—by opening opportunities for them to locate in nonurban areas.*
- *Housing for military personnel comparable with housing of civilian standards and that will sustain military morale.*

The U.S. is badly in need of a new, comprehensive, coordinated housing policy. Years of piecemeal legislation have produced a patchwork of federal housing and urban renewal programs marked by inefficiency, inconsistency, and lack of coordination. Unfortunately, there is little prospect that either Congress or the Eisenhower Administration will draft any comprehensive housing legislation this year. With congressional elections coming up, and the nation preoccupied with defense and recession, the best that can be hoped for is that the most troublesome obstacles to building will be removed, and the most serious defects in the existing federal housing laws corrected.

With these limitations in mind, here are FORUM's proposals for a sound housing program, A.D. 1958. They comprise the reforms which are most urgently needed right now, and which would also contribute substantially to any future comprehensive housing act. There are four general areas in which action is needed:

I. Aid to home builders

An unprecedented volume of home building has been achieved in the U.S. during the past decade. Since 1947 some 10.3 million one-family, nonfarm houses have been built in the U.S. and a substantial impetus to this home-building boom came from the FHA and VA mortgage guarantee programs. Despite the clamor of home builders, private home building is probably the area of construction activity least in need of additional government help.

During the 1956 to 1957 "tight money" squeeze, home builders complained—with some justification—that FHA and VA regulations restricted credit in the construction industry more than in any other segment of the economy. Recently, however, the government has been easing its housing credit rules, and FHA has established new income evaluation standards for FHA mortgages that may double the number of families qualified to purchase $15,000 houses, triple the number eligible to buy $20,000 houses.

With home building already on the upswing, relatively little action by Congress or the Administration is needed to insure a continuation of the uptrend in residential construction. FORUM recommendations:

Raise FHA mortgage limit

Congress should approve the Eisenhower proposal, endorsed by the home-building industry, that the maximum FHA mortgage on a single-family house be increased from $20,000 to $30,000. Due to inflation, and when adjusted to changes in building costs, a $30,000 mortgage today corresponds roughly to a mortgage of only $11,500 in 1940 (when FHA's limit was $16,000).

Decontrol interest rates

Congress likewise should adopt the administration's proposal that rigid "price fixing" of FHA mortgage interest rates be stopped. By setting intermediate interest rate ceilings below the home loan statutory maximum of 6 per cent, the FHA has, in effect, made it necessary for lenders to resort to discounts or premiums to obtain current "market" yields.

Adopt "partial" insurance

The U.S. Savings & Loan League has proposed a new system of "partial" mortgage insurance that would be issued through the Home Loan

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Bank System (the reserve bank system for savings and loan institutions). Under this plan, or a similar system being considered by FHA, only the risky top 20 or 25 per cent of the lender's investment would be insured, thus reducing the mortgage insurance premiums that the borrower would pay. Such a system now operating in Canada is estimated to cost home buyers 50 per cent less than the present 100 per cent FHA insurance system—and in the U.S. would produce a saving for the home buyer of about $630 on a 25-year, $15,000 mortgage.

II. Aid to urban renewal

The government-fostered suburban home-building boom since World War II has helped create and compound the housing problems that now beset many cities. Two of the chief, but little noted reasons for the exodus of so many middle- and upper-income citizens from the cities have been: 1) the ease of buying homes in the suburbs with FHA and VA assistance, and 2) the difficulty of finding good rental housing in the city because of laws which make it difficult and frustrating for a builder to erect rental apartments.

Coincident with the exodus of middle-income people from the city there has been an influx of low-income minority groups who have settled in the slums, intensifying blight and expanding blighted areas. New York City officials estimate that an average of 32,000 Puerto Ricans, mainly of low income, have migrated to New York each year since 1950. As Morton Grodzins reports in the October, 1957 *Scientific American:* in the decade from 1940 to 1950 the white population in the nation's 14 largest cities rose 4 per cent, the nonwhite population 68 per cent. " . . . All evidence makes it highly probable that within 30 years Negroes will constitute from 25 to 50 per cent of the total population in at least ten of the 14 largest central cities."

To offset the exodus of the middle- and upper-income families, officials in many U.S. cities have started redevelopment programs that involve the razing of slums and their replacement by large-scale renewal projects. Although it is now becoming distressingly clear that cities cannot be saved by "projects" alone, these programs can have considerable value in replacing the worst slums, which cannot be attacked piecemeal, and in supplying a permanent nucleus of good building around which private rehabilitation can profitably be ventured. To encourage and accelerate urban renewal, therefore, Congress should:

▸ *Give renewal more continuity*

The U.S. Conference of Mayors recommends that Congress authorize at least $350 million a year in grants for urban renewal over the next ten years (grants are now usually extended on only a year-to-year basis); the AFL-CIO recommends $500 million a year for ten years; Developer William Zeckendorf urges a ten-year program, "so that cities, developers, and the government itself will be assured that their best efforts and their joint investment will not be aborted." The American Municipal Association estimates, on the basis of data from 236 cities, that municipal applications for federal renewal grants will exceed $490 million this year, and will total at least $380 million in 1959, $350 million in 1960, $320 million in 1961, and $300 million in 1962—a five-year total of $1.8 billion.

President Eisenhower has proposed a six-year extension of the urban renewal program, so that cities can have "positive assurance" of the program's continuity. But the amount of money he requested was far below the amounts urged by ardent renewal advocates. The President recommended $250 million a year for the three fiscal years starting July 1, and then $200 million a year for the following three years—a six-year total of $1.3 billion.

FORUM endorses the President's $1.3 billion program but to allow greater flexibility, suggests that it be enacted as an *over-all* six-year, $1.3 billion program with authority for the administration to issue commitments for not more than 40 per cent ($520 million) of the total $1.3 billion of assistance funds in any single year. This would eliminate needless competitive pressure on cities to race to get their projects approved ahead of other cities within any single fiscal year—like frantic women at a bargain-basement table pushing and fighting to get hold of a limited number of "sale" items.

▸ *Reduce federal responsibility*

The President has also proposed a gradual percentage reduction in the federal share of renewal costs (from two-thirds now to one-half in 1962). "The time has come," he declared, "when states and local communities should assume a share of the administrative responsibilities and financial costs more commensurate with the benefits their citizens receive."

The National Association of Housing and Redevelopment Officials, on the other hand, urges "a more realistic" (i.e., bigger) federal contribution. Says NAHRO: "The urban renewal program is no less important than the highway program, for which the federal government bears 90 per cent of the cost." The Conference of Mayors suggests that the federal share of the public costs of renewal be upped to 80 per cent.

FORUM concurs with the President that the federal role in renewal should be reduced. However, it also recognizes that most state legislatures are dominated by rural interests and that there is considerable danger that the program might be crippled if the reduction schedule were put into effect before states and cities were ready—and able—to carry an increased share of the load. One possible solution has been put forward by the Joint Federal-State Action Committee and approved by the National Association of Real Estate Boards. NAREB has urged that Congress "study the feasibility" of surrendering present federal taxes on real estate conveyances and the federal taxes on gifts and estates [which bring in some $1.5 billion a year] to enable state and local governments to assume a much greater degree of responsibility for slum clearance. Since the states obviously must have revenues as well as the responsibility if they are to take on more of the urban renewal load, FORUM urges the adoption of this proposal or of some similar transfer of taxing power prior to any cutback in federal support.

▸ *Establish city "land banks"*

Permit cities to acquire and clear blighted areas—with federal aid—

before submitting specific renewal plans to the Urban Renewal Administration (as now required). This change has widespread industry backing. It would speed up renewal projects by allowing planning and acquisition to proceed simultaneously, instead of successively as at present. It would also allow cities to set up "land banks," to hold cleared land for extended periods, until the time was propitious for redevelopment. This idea was first proposed at FORUM's Round Table on *How to Make Urban Renewal Work* (April 1956).

III. Aid to rental housing

Congress has modified the FHA mortgage terms for rental housing a number of times since World War II. In the war and postwar periods (through 1954) a great wave of rental housing was built under FHA's "Section 608" program. Under that ill-starred program Congress approved mortgages for 90 per cent of the estimated construction costs of apartment projects. With liberal profit-margin allowances and generous FHA cost estimates based on "average" estimated costs, many efficient builders—and a few unscrupulous ones—were able to obtain "608" mortgages that exceeded their total construction costs—and, so, to obtain so-called "windfall" profits on these loans.

After the "608" program expired, and the windfall "scandals" had been aired, Congress authorized three FHA rental programs (Sections 213, 220, and 221) that theoretically allow a builder to "mortgage out," or borrow a sum equal to, but not in excess of, all of his actual costs. To prevent windfalls, all of these programs are now subject to an FHA "cost certification" requirement and the original loan is scaled down if the project is erected for less than original estimates.

This means that, today, an FHA rental builder can never complete a project with more cash than when he started the job; his entire construction work profit must be taken in "brick-and-mortar," as an equity investment in the building; and if his costs rise and exceed original FHA estimates he also may have to make an increased out-of-pocket cash investment in the project. In addition, the FHA controls his rents.

By contrast, the suburban home builder ends up with his cash profit in his pocket on each house as soon as the buyer has made his down payment and obtained his mortgage loan. FHA puts no ceiling on his profit. There is no fixed ratio of profit to costs; he is not subject to "cost certification" rules; and FHA does not control his sales prices.

If Congress wants to encourage rental building, if it wants to halt the exodus from the cities and the cities' consequent deterioration, Congress must make FHA mortgage terms on rental housing at least as attractive as the terms on suburban housing for both the builder and the renter. The only practical way to achieve the needed volume of urban rental housing will be through a vast amount of efficient, unharassed private construction, and that volume will only materialize when there are reasonable prospects for builders to obtain reasonable building and/or operating profits, competitive with profit inducements offered by ventures of all other types.

What is really needed, according to FORUM Consultant Miles L. Colean, is some incentive to true equity "investment" that would allow the ownership-operation of rental housing to be divorced from the building operation. The ordinary builder essentially only wants to be a *builder*—and not be compelled to tie up his funds and become a long-term realty *investor-owner*. About the only plan Colean has seen that holds any promise of bringing this ideal state to pass, he adds, is the real estate investment trust (see below).

With these considerations in mind, FORUM believes that Congress at this session should enact the following changes to the housing laws:

▸ *Allow apartment profit-taking*

Congress should permit FHA to insure "no cash investment but no windfall" rental housing mortgages on a more widespread basis. Such insurance is now permitted—in theory—for projects in specific renewal areas, or for officially certified "relocation" housing (Section 220 and 221 rental loans) and for management-type cooperative apartments (Section 213). Under a contemplated plan to allow "mortgaging out" on regular apartment projects too, FHA would insure a mortgage for 100 per cent of a builder's out-of-pocket land and building costs (subject to rigid "cost certification"), and then allow him a profit of 5 per cent of the total building cost for the work he did in *building* the project. Beyond that, however, all earnings above an FHA-approved management fee would have to be applied to reducing the mortgage, and the builder could not take out any ownership or operating profits until the FHA insurance was terminated. Thus, the owner-builder would gradually accumulate a large "frozen-profit" equity in the project but would have no prospect of getting any of this profit out in liquid, useable form for perhaps ten years, which would be about the earliest he might be able to sell or refinance the project with a conventional (non-FHA) mortgage.

In drafting this proposal, FHA

Congressional action recommended by FORUM

Raise FHA mortgage limit from $20,000 to $30,000.
Decontrol FHA interest rates and "discounts."
Provide "partial" mortgage insurance.
Allow profit-taking on rental housing construction.
Give "conduit" tax treatment to income of real estate investment trusts.
Approve Eisenhower's six-year, $1.3 billion renewal program.
Permit cities to start renewal projects prior to completion of planning.
Allow cities to buy up land for future redevelopment.
Allow "over-income" tenants to remain in public housing but charge them "economic rents."
Allow public housing tenants to purchase their apartments.
Acquire existing buildings for public housing use.

continued on page 174

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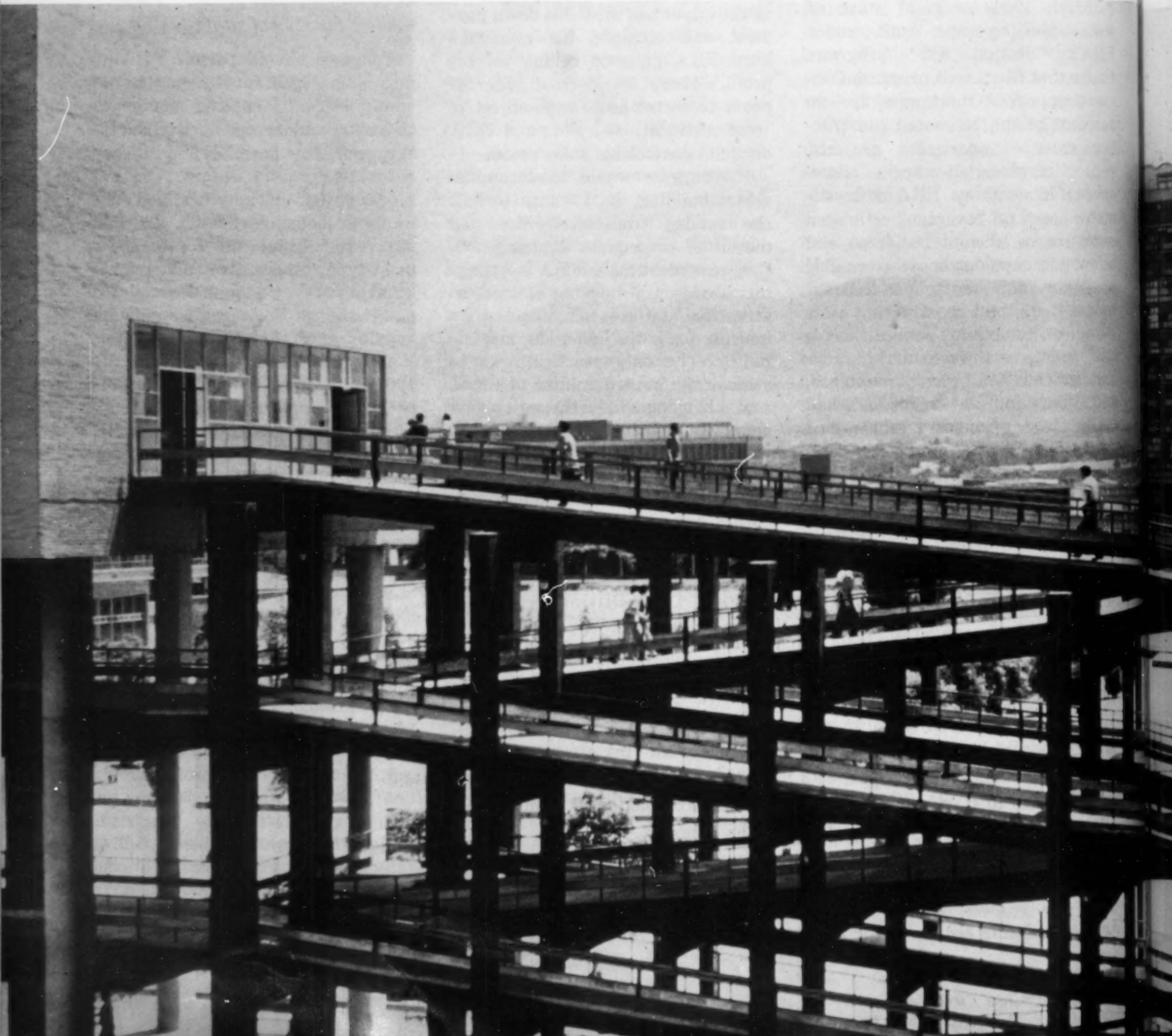
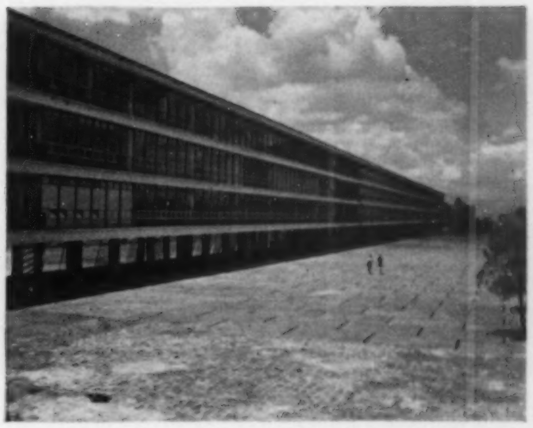
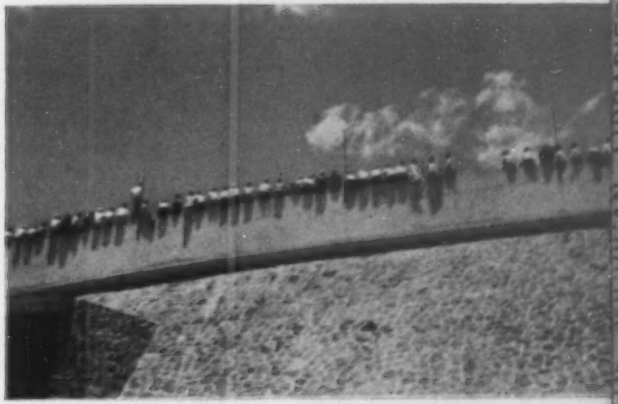
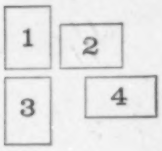
Mexico's mammoth campus

For sheer size, pattern, and color, Mexico's National University doubtless stands unmatched in modern design. It Brobdingnagian vistas and walks, thousands of feet long, run between great sculptured and decorated building groups that define a mile-long campus outside Mexico City. But size can sometimes slip beyond the bounds of human scale. To find out how students were adjusting to their monumental surroundings, FORUM recently asked Photographer Wallace Litwin to turn his professional eye on the nearly completed campus, and to focus on its inhabitants. As Litwin's pictures show, the University's seas of space lap up on little islands scaled to humans—a clump of shade trees, a wall, a pool, a patterned court. Around the outside of the campus, free buses save some giant steps. But compared to the little figures in its landscape, Mexico University still looks awesomely big.









The man-dwarfing scale of the campus is dramatically revealed in the four photos above:
(1) Groups of students negotiate the center of the campus, where the "lawn" is a hard-wearing texture of steppingstones and grass. (2) The humanities building, a Corbusian superblock-on-stilts nearly a quarter mile long, leaves two students drifting in space. (3) In a grove of young trees, one of many intimate "islands" on the huge campus, a student finds a place to read. Beyond, tall banks of red louvers shade the medical school. (4) Like fat birds on a fence, spectators perch atop the 110,000-seat Olympic stadium.

On a fantastic framework of crisscrossing concrete ramps (left), students walk between buildings of the medical school. Across a huge plaza, 1,000 feet away, rises the Corbusier-style Tower of Science.

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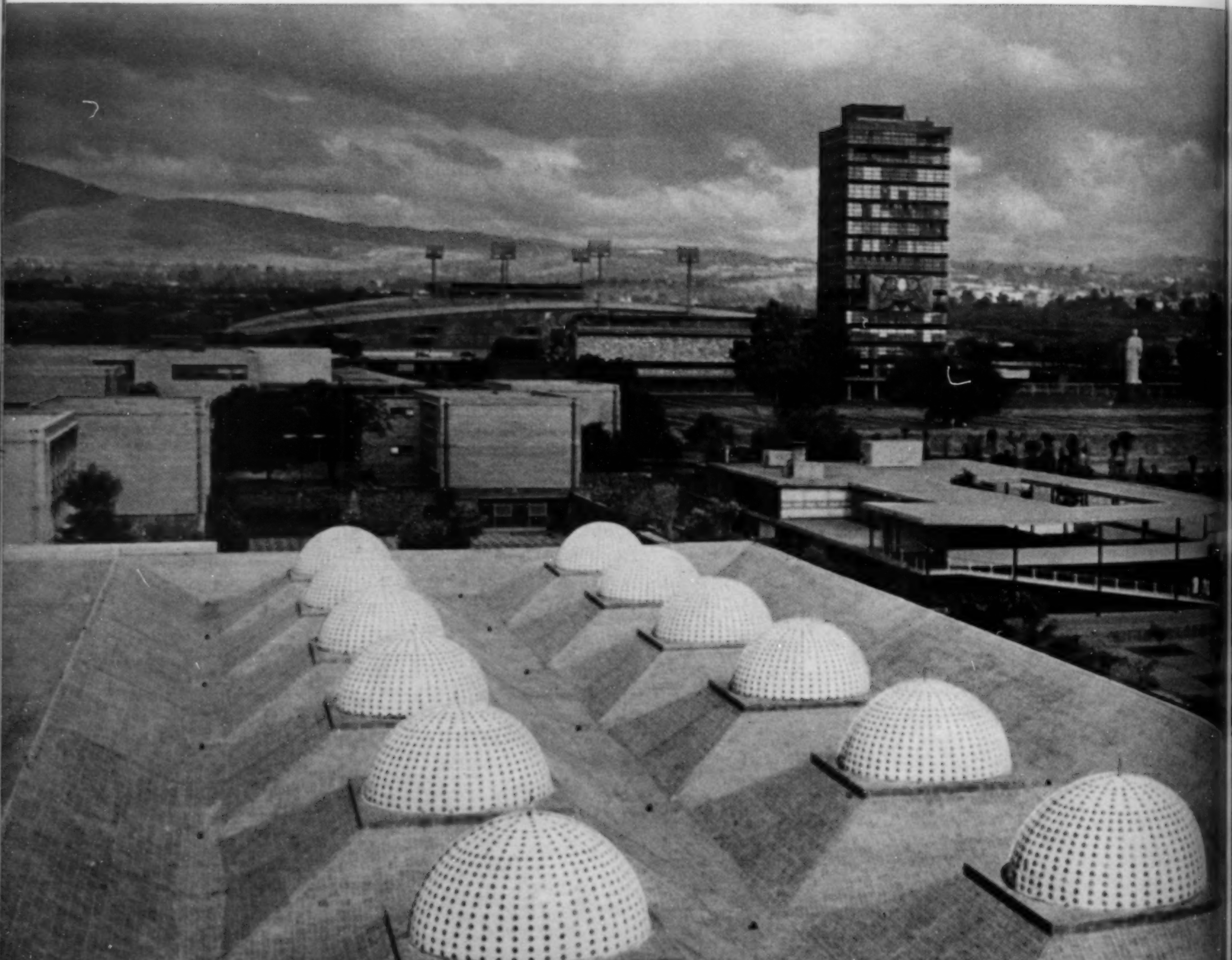
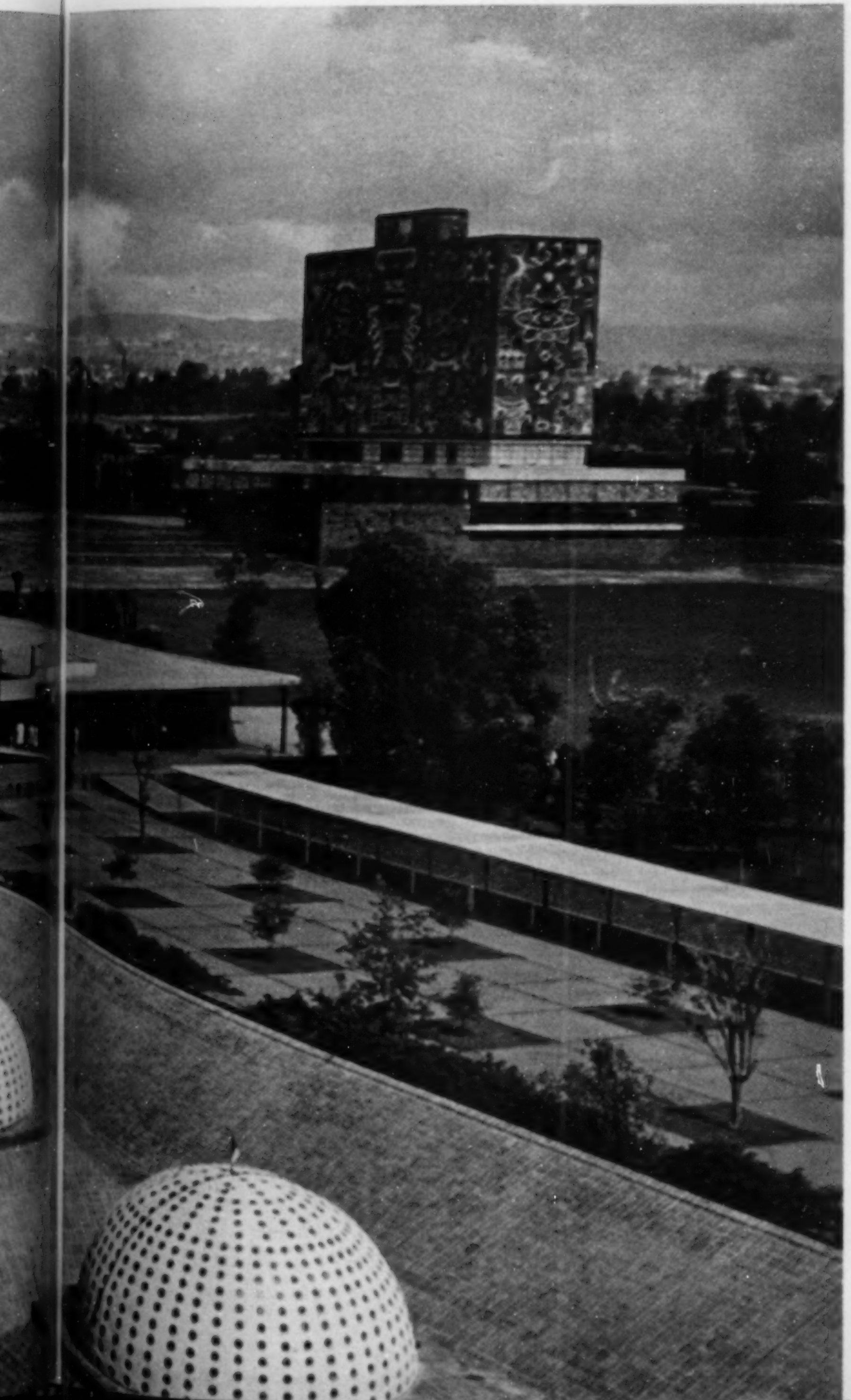
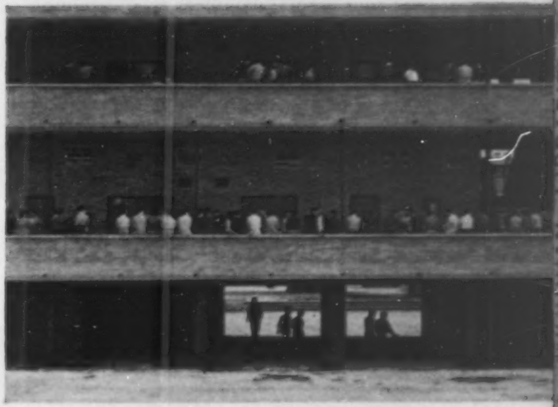
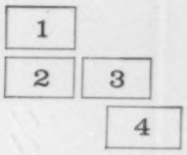
To some visitors, the skylights of the engineering lab recall the multiple domes of Mexico's Spanish Colonial days; to others, they look like big golf balls teed up on pyramids. At left is the architectural school; at the head of the courtyard is the campus cafeteria. In the distance: the stadium, echoing the crater shapes of nearby volcanoes; the glass administration tower; the statue of alumnus, benefactor, and ex-President of Mexico, Miguel Alemán; and Juan O'Gorman's stunning library wrapped in its symbolic murals.









Above: (1) *In academic robes of their colleges, the university's regents set out in ceremonial procession. Behind them, thin slabs of native yellow marble admit soft light to the upper part of the library's reading room.* (2) *Ant-sized students pick their way across giant-sized squares of a main walk.* (3) *An attendant carries a student anatomy lesson down a corridor of the medical school.* (4) *In a courtyard of the architectural school, students gather outdoors between classes. Walls behind them are plastered with student election placards.*

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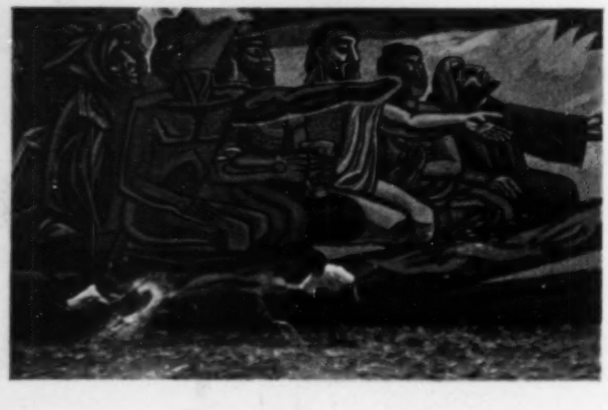
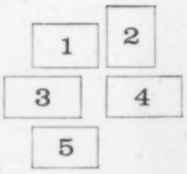
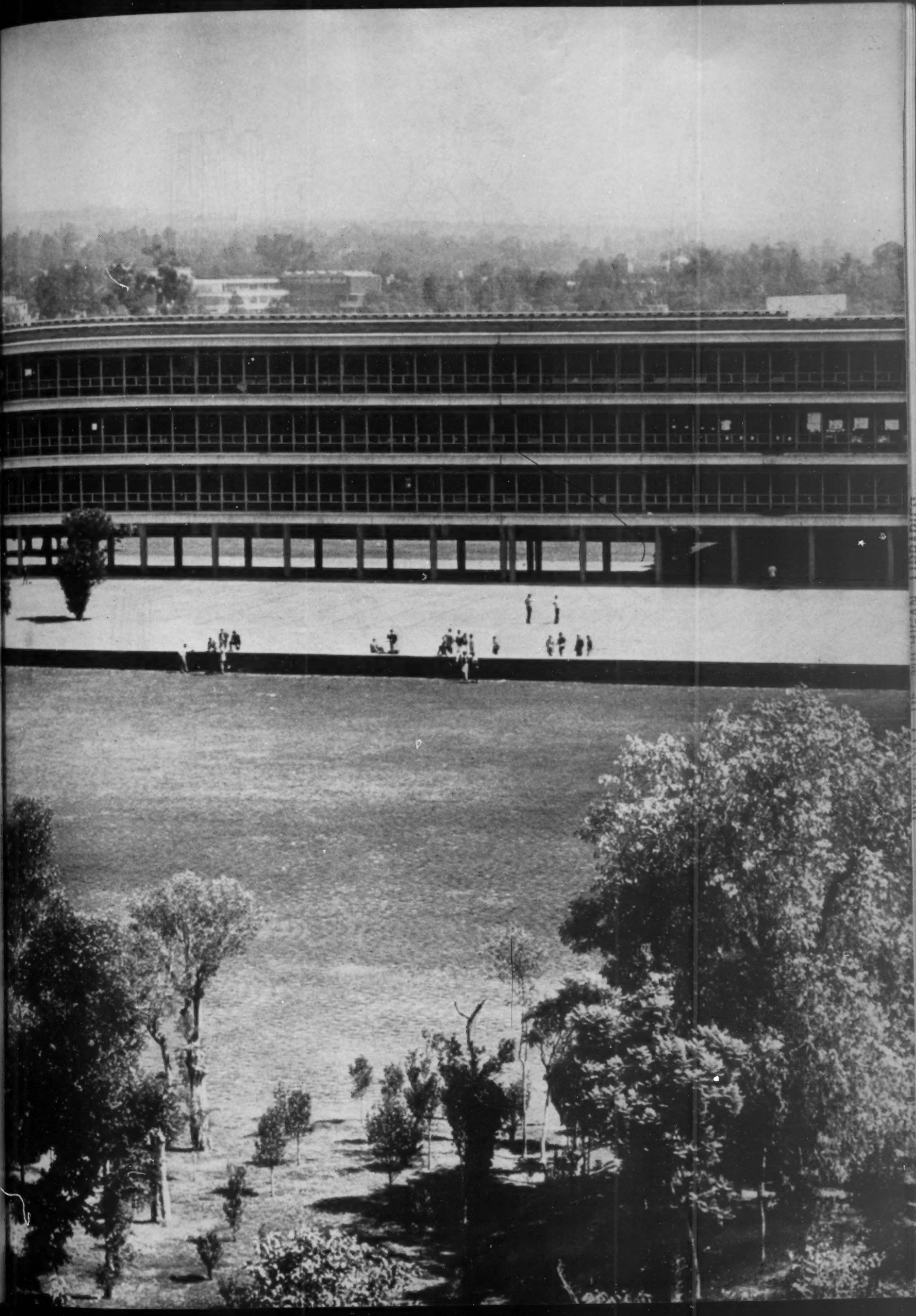




On this page: (1) *Down the sheltered walkway under the humanities building, big rectangles of pebbled paving and a yellow ceiling help relieve a long perspective.* (2) *A change of level and a willow tree in the campus forecourt provide a visiting mother and son a place to rest.* (3) *Smaller campus courtyards have lively patterns of more human scale. Architecture students, seen here displaying their models, call this the "peanut patio."* (4) *The bareboned chemistry building opens underneath to form one of many gateways to the campus.* (5) *Visiting schoolgirls find a pool to play in, where the water catches the glitter of mosaic paving. Behind them looms Chavez Morado's "Return of Quetzalcoatl," one of many mosaic supermurals on campus.*

Photographs by WALLACE LITWIN

Seen across the vast central mall (right), students on the terrace of the humanities building congregate around the only anchor in space, a long lava-rock wall.



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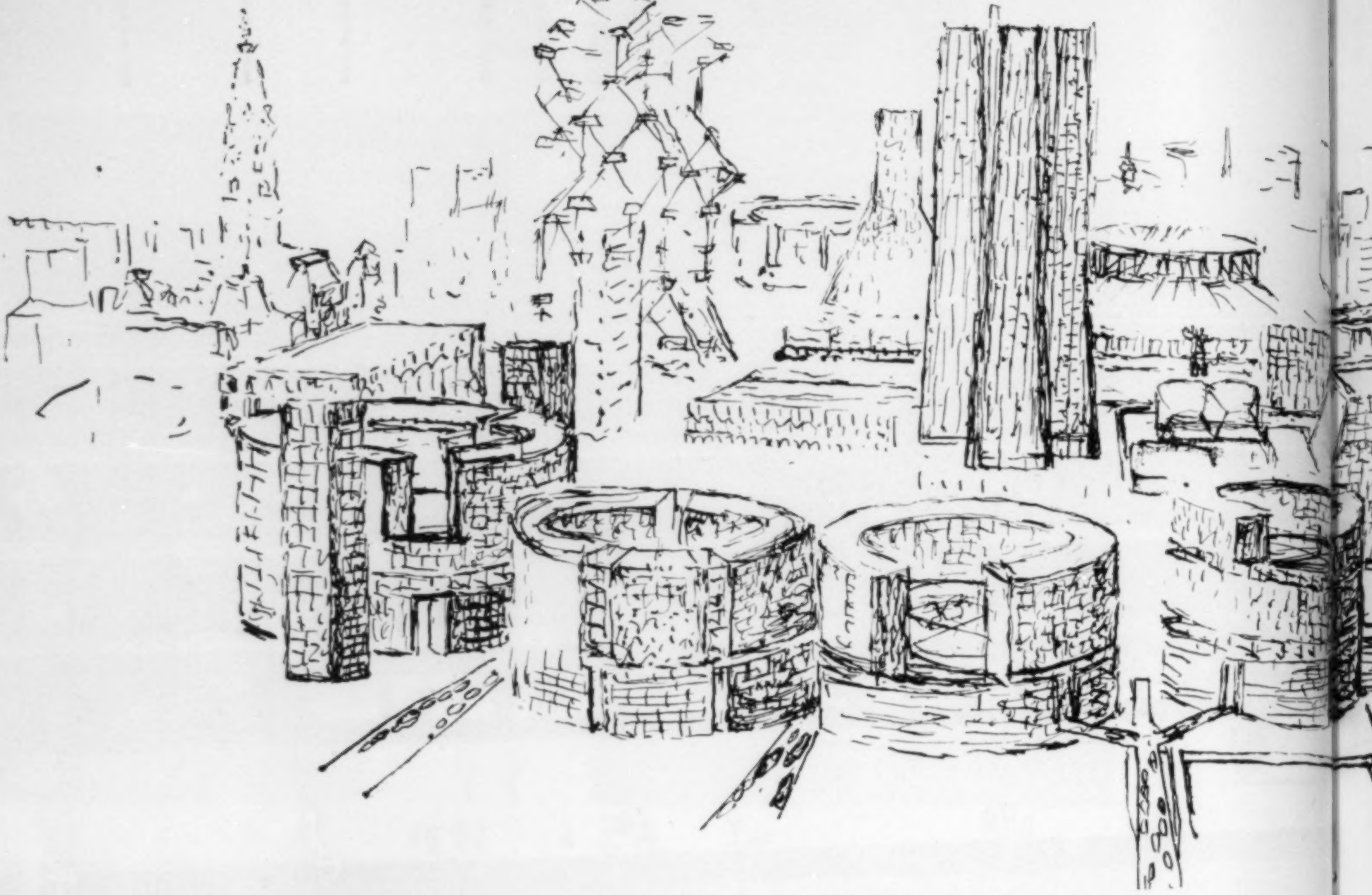
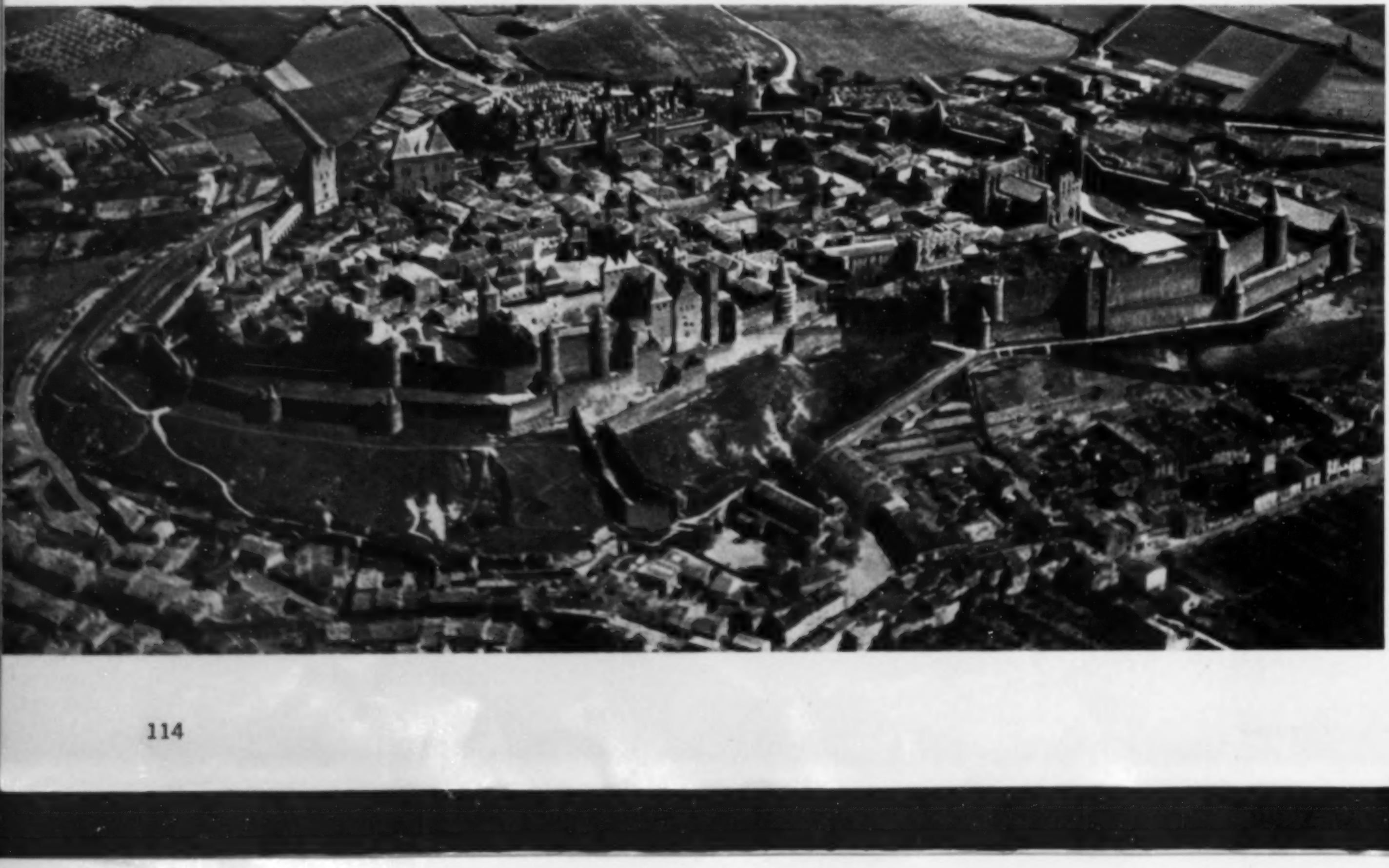
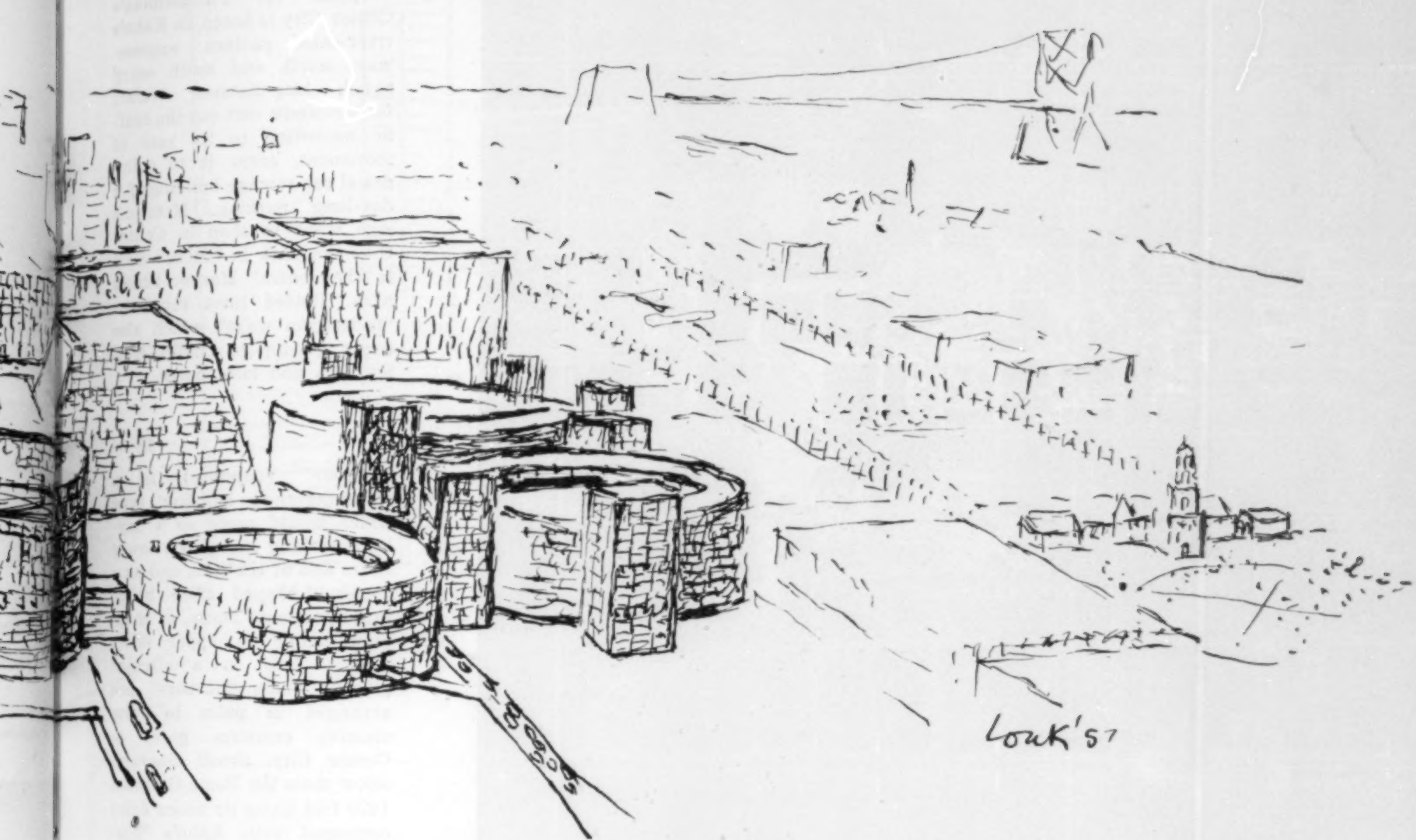


Kahn's proposal for Philadelphia's Center City (above) shows the downtown area ringed by cylindrical parking towers, or "harbors," not unlike fortifications of thirteenth-century Carcassonne (below). Existing City Hall is shown at left, next to Tinkertoy-like skyscraper designed to house municipal offices. Truncated pyramid would be a Market Street department store. Delaware River is visible at right.

ERIC SCHAAL—LIFE





Louis Kahn and the living city

Louis I. Kahn, of Philadelphia, is one of America's foremost architects—and one of this country's most creative thinkers about the nature of modern cities. This is the second of two articles on his work; the first appeared in the October 1957 issue of FORUM.

"In this disintegrating world of men reduced to partial beings," Walter Gropius has said, "Lou Kahn stands up as a total man."

It is an apt description, for Architect Louis I. Kahn, of Philadelphia, is no narrow specialist, no "experts' expert." To city planners, he is a visionary architect. To fellow architects, he is a poet. To social theorists, he is an inspired planner. And to all who have allowed themselves to fall under the spell of Kahn's intense, articulate, witty personality, he is clearly a man possessed by a single, compelling truth: that nothing can live unless it acknowledges a simple, logical system of organization, a principle of order.

This truth Kahn applies, specifically, to buildings, to streets, to whole cities. For in his mind, these are not inanimate things—they are alive, or can be if they are created from a "principle of order."

What Lou Kahn means by "order" has little to do with orderliness or discipline. It is best translated by words like "nature" or "organism." When Kahn says that his favorite medieval city — thirteenth-century Carcassonne, in southern France— "was designed from an order of defense," he means that Carcassonne (photo, left) was designed as a defense organism and that its defense nature gave form to everything within and without its walls.

Cities, to Kahn, are people whom he may love or hate, trust or fear, approach with humility or with a

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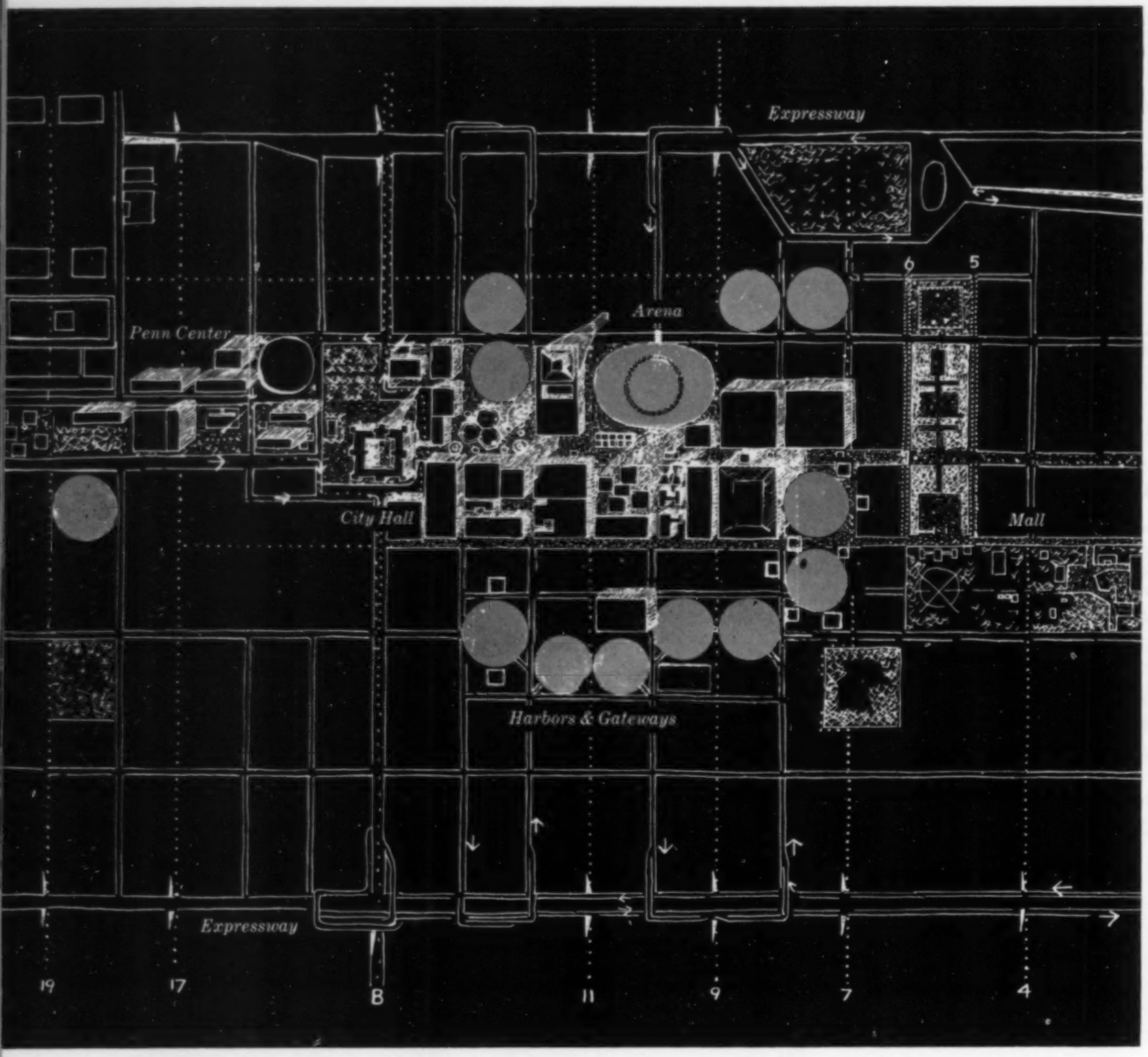


Proposal for Philadelphia's Center City is based on Kahn's river-canal pattern: expressways north and south carry rapid, long-distance traffic; feeder-canals sort out the traffic according to its rate of movement, carry it to cylindrical car-storage buildings for day-long parking. Motorists who want to shop in Center City can park in "docks" close to the central Market Street area. Dotted lines represent "pedestrian ways" which also carry go-stop-go traffic—trolley cars and local buses.

"Harbor" (opposite) is a Kahn-designed building type which would serve as a day-long parking garage on lower floors and at the core, and as a doughnut-shaped office building, apartment house, or shopping center on upper floors (which face on a circular plaza). These "harbors" are arranged in pairs to form massive entrance gates to Center City. Small diagrams below show the Rome Coliseum (620 feet along its major axis) compared with Kahn's "harbor" which measures 440 feet in diameter.

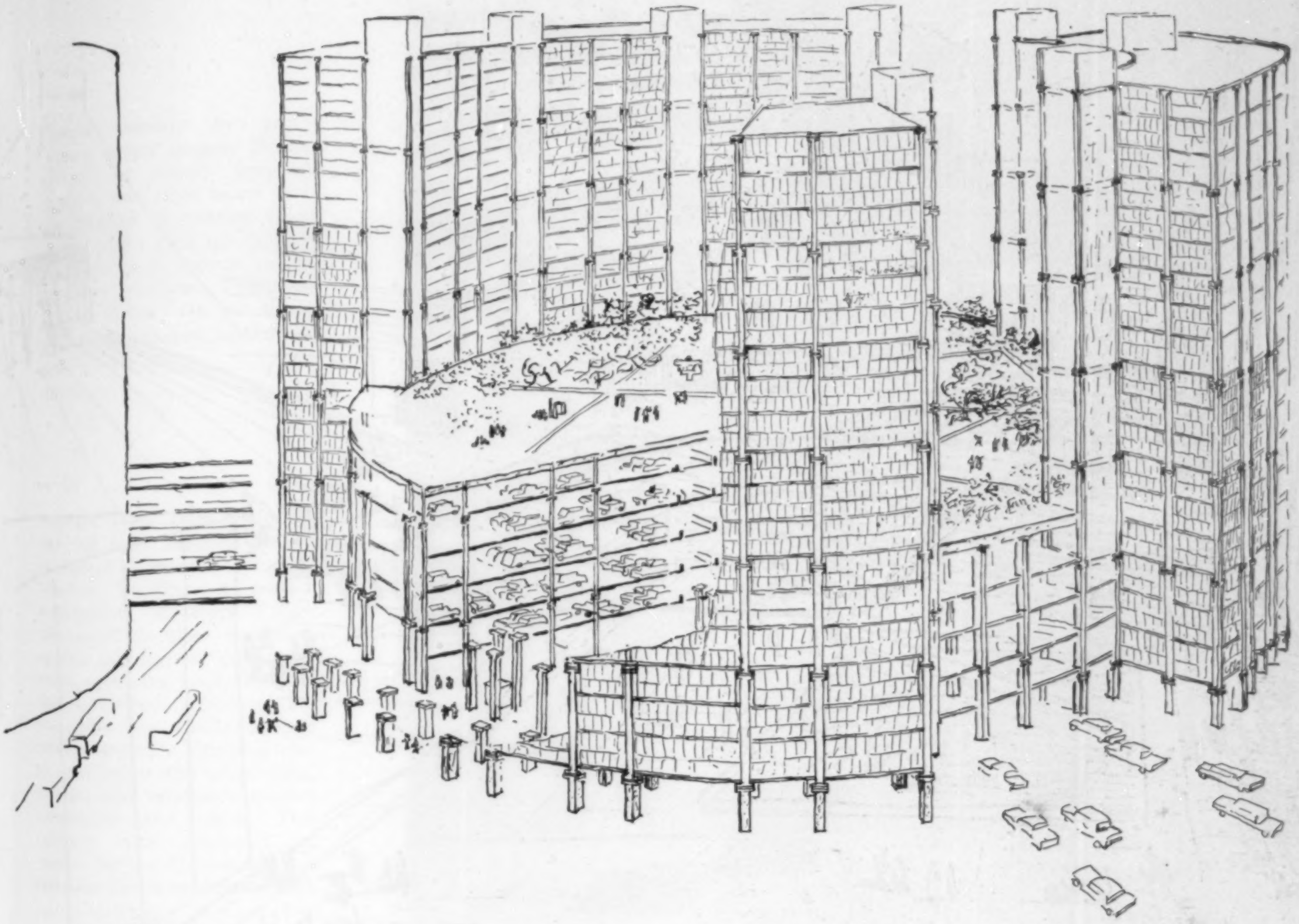
swagger. Carcassonne was Lou Kahn's first love; his eyes still light up when he mentions her name. Later, he had a brief, shy encounter with the city of Pisa. "When I first came to Pisa," he recalls, "I went straight in the direction of the piazza. Nearing it and seeing a distant glimpse of the tower filled me so that I stopped short to enter a shop where I bought an ill-fitting English jacket." Not until the next day did he gather up enough courage to go to the piazza. But the American city has turned Lou Kahn into another Pygmalion; somehow, by the sheer force of his passion, Kahn is going to give this jumble of junk a new lease on life.

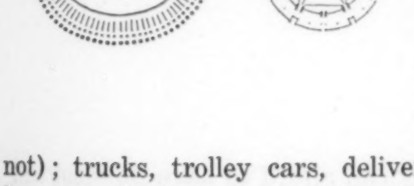
Not that Kahn thinks the city is dead; far from it. In his mind's eye, he sees the city gasping for air. "A street wants to be a building," Kahn says; and, because to him a "building" is a living thing, this sentence evokes an image of a street fighting for its life. "Spaces that want to be," Kahn says; and, again, the image evoked is that of a living organism struggling to attain its highest capability. The architect serves as the form-giver, as Pygmalion, whose function it is to breathe life into stone so that the stone may, in turn, become a life-creating force.

Let the street live

For the most important difference between Kahn and the ordinary city planner is that the planner tries to solve problems as they arise, whereas Lou Kahn believes that if you give the city the right and capability to live, the living city will inevitably solve its own problems — creatively, colorfully, humorously, and ever changingly; that planning serves only to *initiate* life, not to dominate it.

So Kahn proposes: first, let the street live. By this he means that the street-mess must be disentangled so that each street will do its own kind of job in its own kind of way. Today's city streets carry half a dozen different, contradictory types of traffic—pedestrians who want to stroll along; buses that want to go-stop-go; private cars that want to go at an even rate without stopping, and then find a place to park; other cars that want to bypass the city altogether (but can-





not); trucks, trolley cars, delivery boys or what have you, each with a different mission, each with a different rate of movement.

To funnel all these kinds of traffic through one and the same street is as silly to Kahn as funneling gas, hot water, cold water, wastes, and electric current all through the same pipe in a house. And not only does the resultant chaos make a mess of the street—it also makes most buildings along the street unworkable. For no building can work equally well for a pedestrian moving 3 miles per hour and for a sedan going 50.

Kahn's solution is taken, characteristically, from a natural phenomenon that has always spelled "life" to the poets: the phenomenon of great rivers. "Expressways are like rivers," Kahn says—and, like rivers, they may carry a variety of traffic. "These rivers should frame the area to be served—Center City. Rivers, in turn, have harbors." In Kahn's vocabulary, the harbors are municipal parking garages—great, cylindrical towers with all-day car-storage space at the core (for use by suburbanites) and apartments, offices, or motels all around the perimeter. Here the river traffic begins to be sorted out. "From these harbors, canals branch out that serve the interior." These canals have few, if any intersections, and permit motor traffic to move smoothly and at an even rate (trolley cars and local buses use separate approach streets to the Center). "From the canals branch out cul-de-sac docks," Kahn continues. The docks provide short-time parking, service, unloading, etc. "They serve as entrance halls to the buildings," he concludes.

The system seems clear, the analogy is effective. But is the proposal too visionary? Not at all, says Kahn. The Fort Worth Plan (FORUM, May 1956) developed by Architect Victor Gruen is an example of what Kahn means. And in every downtown area currently suffocating from clogged street systems, planners have recognized that the only way out is to restore the streets to "life"—or rather, to the different kinds of life that modern traffic demands.

Down with decentralization

The beauty of Kahn's concept is that, if put into operation, it should

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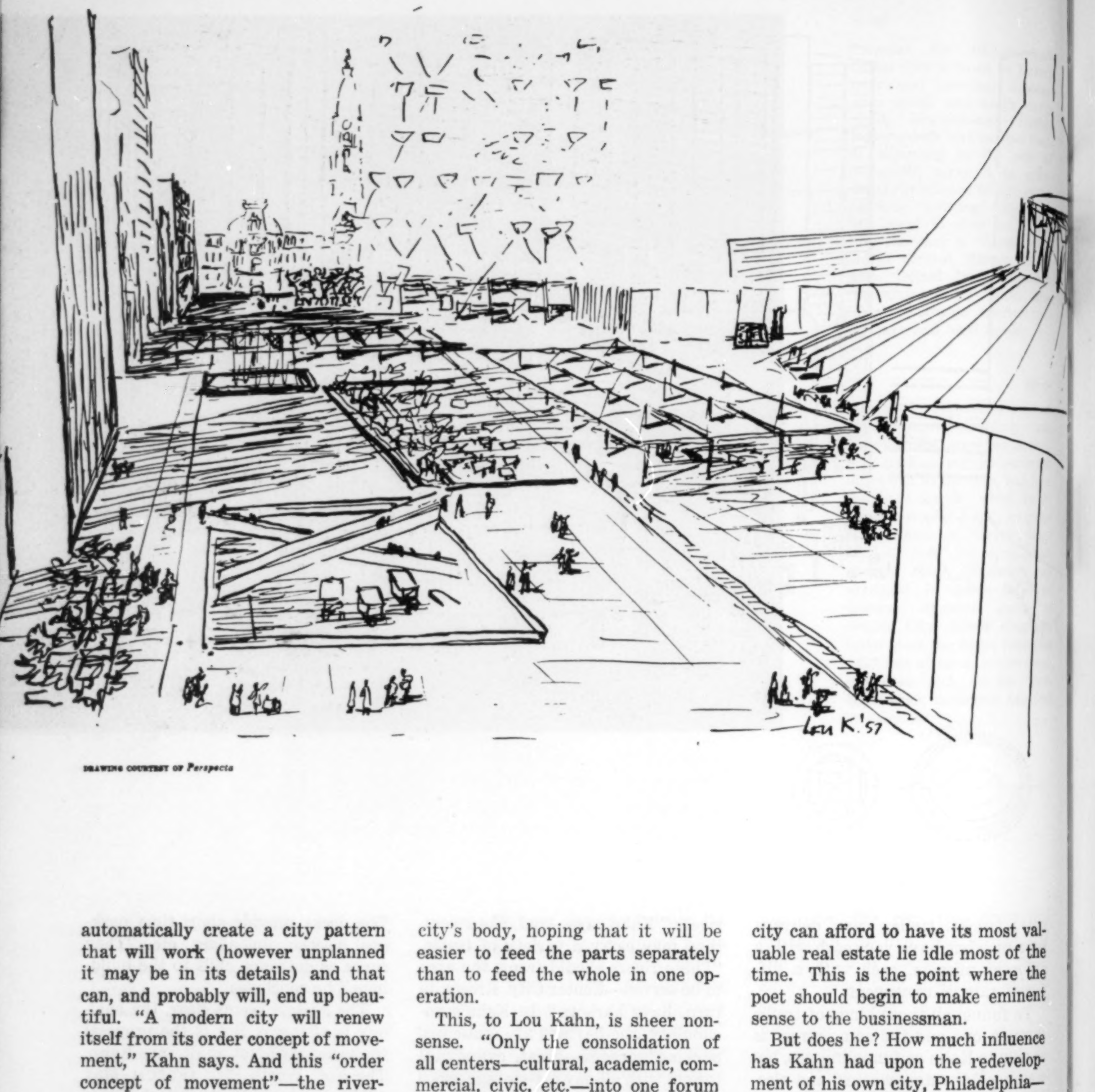


DRAWING COURTESY OF *Perspecta*

automatically create a city pattern that will work (however unplanned it may be in its details) and that can, and probably will, end up beautiful. "A modern city will renew itself from its order concept of movement," Kahn says. And this "order concept of movement"—the river-canal pattern—would reverse certain tendencies that threaten the heart of modern cities.

Chief among these destructive tendencies, according to Kahn, is decentralization. "It disperses and destroys the city," he says. Decentralization puts shopping centers miles outside the city limits; decentralization puts a sports arena in the suburbs—only because nobody could get to it if it were located in Center City; decentralization cuts up the city's body, hoping that it will be easier to feed the parts separately than to feed the whole in one operation.

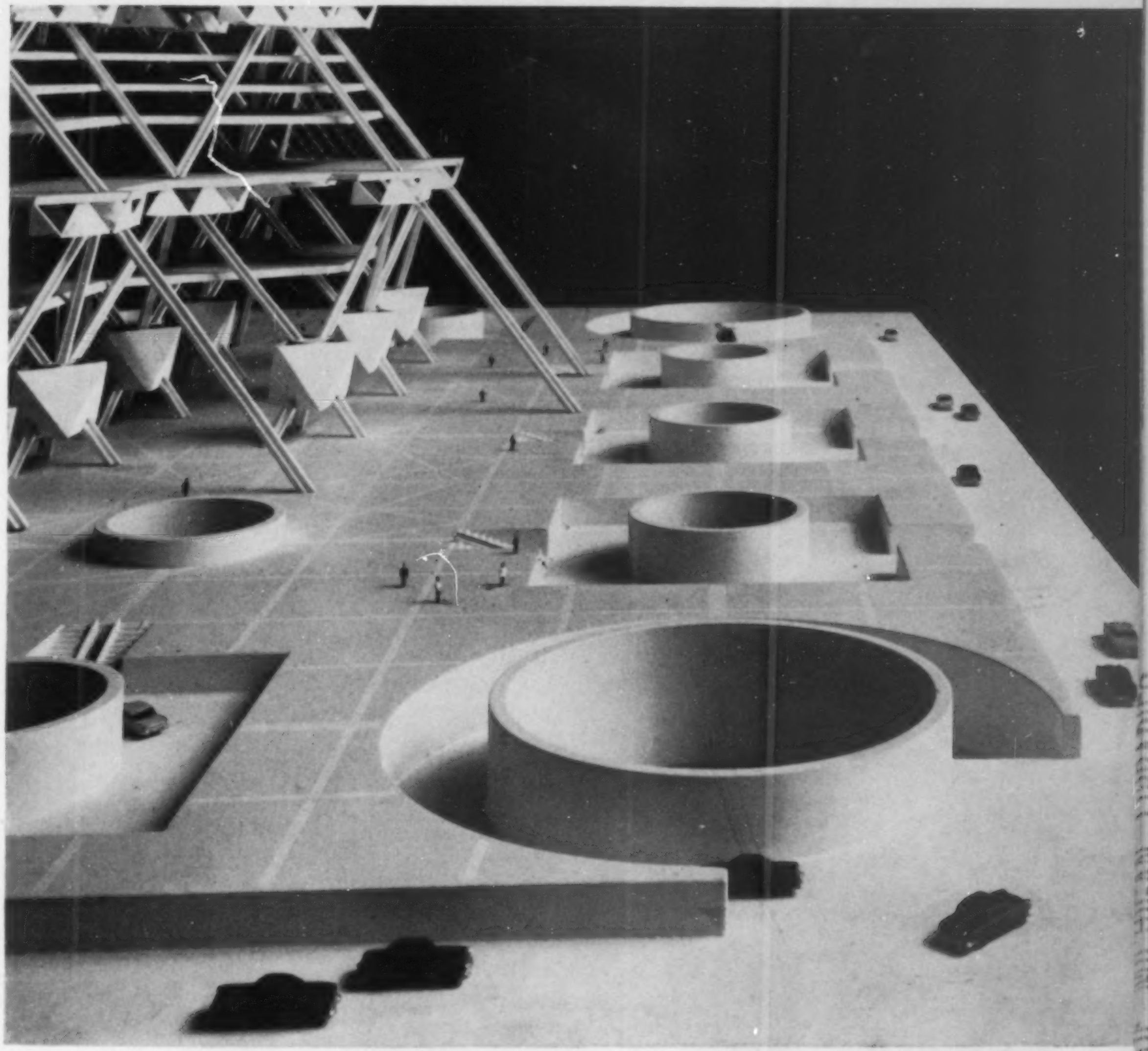
This, to Lou Kahn, is sheer nonsense. "Only the consolidation of all centers—cultural, academic, commercial, civic, etc.—into one forum will inspire renewal of the city. . . . An arena placed outside the city for reasons of parking is isolated from its other living companions. . . . In the Center its space will stimulate ideas for its use and strengthen other places of meeting and commerce by its presence." Most American downtown areas, Kahn maintains, operate on a part-time basis only—either on week days or on week ends, either during working hours or after working hours. No city can afford to have its most valuable real estate lie idle most of the time. This is the point where the poet should begin to make eminent sense to the businessman.

But does he? How much influence has Kahn had upon the redevelopment of his own city, Philadelphia—a city with a fine planning commission and with a big portion of downtown open and ready for development?

Edmund N. Bacon, the planning commission's executive director, thinks that Kahn's abstract concepts about the city have great value. "Lou has a very important function as a producer of ideas—and the equally important function of challenging other ideas," Bacon has said. "There is great need for men like Lou, dis-

Raised platform for pedestrians covers present Market Street in Kahn's proposal. Service and other motor traffic remains at existing street level, which gets its daylight through large cutouts in the elevated platform. Pedestrian ramps connect the two levels. Lampshade-shaped building at right is an arena.

Square plaza (measuring 700 by 700 feet) supports Kahn's proposed Municipal Administration Building, a radical, triangular structure. Each corner of the plaza contains a spiral entrance to "docks" for passenger cars, taxis, and local buses. Other cylinders are openings for ventilation and light, serving a shopping concourse below the plaza level. Stairs and escalators connect concourse and plaza. This project was developed by Kahn for the Universal Atlas Cement Co., in association with Anne G. Tyng.



ROBERT DAMORA

UNIVERSITY OF MICHIGAN LIBRARIES

associated from government and throwing ideas into the pot." Most of the time, however, some other cook is called upon to bring the pot to boil. The reason is not that Kahn lacks persuasive power; it is, rather, that he is too much an artist to be satisfied with contributing abstract concepts—he is too deeply concerned about the details of execution.

Mies van der Rohe likes to say that "God is in the details," and—he might have added—that architects are His prophets. If the trouble with most planners is that they think only in the first, second, and fourth dimensions, the trouble with a good architect (if it can be called "trouble") is that he never stops thinking about the third. Every city project ever developed by Lou Kahn strikes the layman as an extraordinary, dramatic, and highly personal exercise in sculpture. Few potential redeveloper-clients manage to see, behind the sculpture, that hard core of planning intelligence which is Kahn's greatest contribution. Instead, they are awed by the sight of a kind of giant sculpture-garden surrounded by huge, medieval towers and gateways, and inhabited by fantastic Tinkertoy skyscrapers, truncated pyramids, and upside-down funnels. These are the stocks-in-trade, the building blocks of Louis Kahn, sculptor. Too often they have proved to be the *stumbling* blocks for some of Kahn's potential clients.

It is not very likely that tomorrow's American city will look much like Carcassonne. But whatever its outward form, tomorrow's city may owe much of its bone structure to Louis Kahn. For his influence has reached out far beyond Philadelphia. "The poet's voice need not merely be the record of man," William Faulkner has said, "it can be one of the props, the pillars, to help him endure and prevail." Architect Kahn's is such a voice. END

MARILYN SILVERSTONE

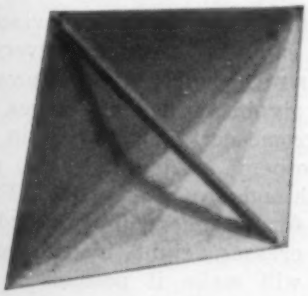
Technology

Buckminster Fuller's 30-year-old science of geodesics is finally getting industrial support. Kaiser-built domes are beginning to sprout in Texas, Virginia, Kansas—and even Venezuela.

The dome goes commercial

LEE BALTERMAN

DESIGN TEAM at Kaiser is headed by Donald Richter (above, left), who learned geodesics from Fuller. During the past year, Kaiser designers have worked out plans for six dome sizes. The next step will be to design free shapes: paraboloids and ellipsoids.



BASIC BUILDING BLOCK of all domes is this kite-shaped panel of aluminum, which combines both structural frame and skin. R. Buckminster Fuller (below) first designed domes with separate frames and skins. Kaiser is one of 63 Fuller licensees.

HAYCOX PHOTORAMIC, INC.

BERCO—FORTUNE

There was a farcical quality about the first aluminum dome Henry Kaiser built amid the Polynesian pomp of his Hawaiian Village resort on Waikiki Beach. And people laughed when Kaiser said that he would mass-produce such domes for the world. But the laughter has died, for out of Kaiser's zany, romantic world has come a whole family of domes and other strange new shapes in what promises to be the first successful industrial development of geodesic structures, the sphere-shaped system for enclosing space developed and championed by R. Buckminster Fuller over the past 30 years.

Fuller alone could never make this happen, despite his eloquence as a teacher and the sturdiness of his geometric principles. It was the amalgam of his idea with Kaiser's peculiar exuberance, plus the ingenuity of Donald Richter, a former student of Fuller's and now a Kaiser designer, which fused the development. From this unlikely union has come a prefabricated roof system which is extremely lightweight (less than 3 pounds per square foot) and supports at least 25 times its weight (some 75 pounds per square foot of floor covered) without significant deformation.

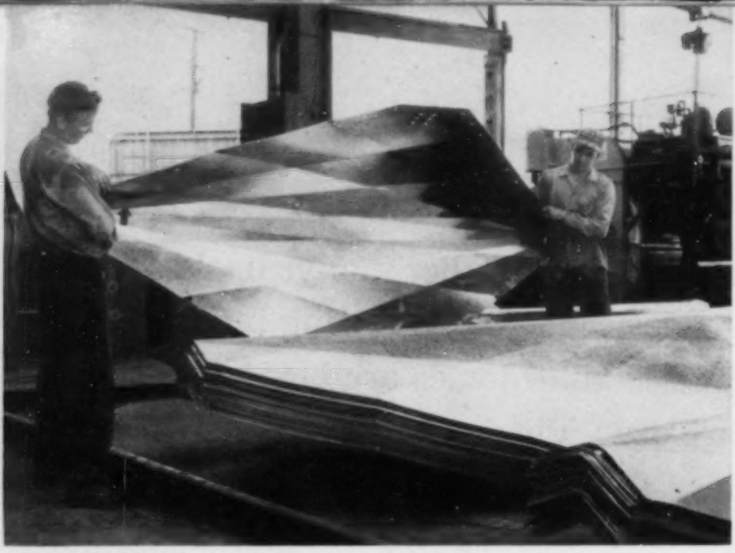
The Kaiser roof is a precision design; its elements are made to tolerances of only ±0.005 inches per 12 feet, an incredible precision by today's building standards. Furthermore, it goes up quickly: the first dome, in Hawaii, which covers 15,300 square feet and seats 1,800, was erected in 20 working hours (588 man-hours). Its cost, for dome and foundation, was $5.50 per square foot. And its total cost, including exterior walls and interior treatment, was $150,000. These are attractive statistics to builders, so it is hardly surprising that within only a few months three more domes have gone up: a convention center in Virginia, costing $360,000; an auditorium in Texas, for $160,000; a conveyor equipment plant in Kansas, for $190,000. And several more are in prospect, including a bank and an opera house.

Fuller to Ford to Kaiser

The story goes that Henry Kaiser conceived the Kaiser dome while driving through the University of California campus one day in 1956 when a group of students were building a dome-shaped aviary. He sped to his office in Oakland, the story goes, and spurred his engineers into designing a dome in aluminum for his Hawaiian Village. The story chimes with Kaiser's dynamic philosophy—"Together We Build"—but it serves no real historic purpose because it is only legend.

Kaiser's real involvement in geodesic domes goes back to 1953 and the Ford Rotunda in Dearborn, Michigan, for which Buckminster Fuller designed his famous aluminum-framed dome (FORUM, May 1953), a 93-foot-diameter hemisphere, clad with a plastic skin, which weighed only 17,000 pounds (1.5 pounds per square foot). The aluminum for the dome was supplied by the Kaiser Aluminum & Chemical Corp., whose project engineer was 26-year-old Donald Richter who had joined Kaiser just a few weeks before. Fuller and Richter renewed an association in Dearborn that had begun at Illinois Institute of Design in 1949, when Richter was a student and Fuller a visiting professor. It was Fuller who attracted Richter to geodesics, and later, to aircraft design, which Fuller thinks essential to the development of a geodesics engineer. He even pointed Richter toward Kaiser, where Fuller sensed an opportunity for a promising geodesics engineer.

When the Ford project was finished, Richter returned to Kaiser's product development section, where a number



HAYCOX PHOTORAMIC, INC.

FABRICATION of the panels in metal-working shops cuts erection time sharply. The aluminum panels are crated, then shipped to the building site, where aluminum struts are bolted on. Kaiser now has agreements with 15 outside firms which form panels and handle the dome's erection at the building site.

of space-enclosure ideas were under study, including domes. By 1956, when Henry Kaiser foretold his Hawaiian Village project, Richter had convinced himself that an entirely different kind of geodesic dome could be built, combining both frame and skin into a single structural element. This was a marked departure from the basic Fuller dome, which consisted of two elements, a frame and a superimposed skin, which were erected separately.

Richter's basic building unit was a diamond-shaped panel of aluminum sheet, with an aluminum strut stretching across its surface, much like the bowstring on a kite. Each panel would be three-dimensionally triangulated, or a tetrahedron. In this respect, the Kaiser dome would be no different from other geodesic structures, because the tetrahedron is the key to forming a space-trussed geodesic dome. In Fuller's geometry (FORUM, August 1951), the tetrahedron is the basic geometric form, because all other regular angular structures can be made up of tetrahedra. By combining frame and skin, Richter took advantage of the skin's structural strength and, in effect, made it a working member of the structural system. Thus, the dome would have a minimum frame, consisting only of panels, fabricated in ten different sizes, which would provide some 75 per cent of the structural integrity of the space truss, plus struts, which would span the surface of each panel to add rigidity. The main advantage of the system would be its adaptability to shop fabrication, which would reflect in greatly reduced costs on the job. Also, the dome promised the same basic advantage as other geodesic structures over more cumbersome constructions in concrete: no formwork would be required.

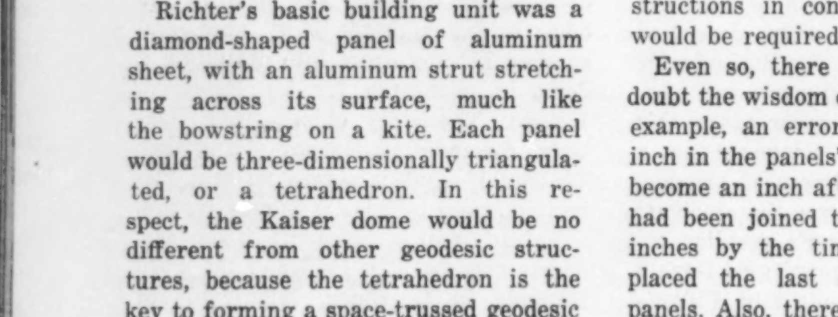
Even so, there was some reason to doubt the wisdom of Richter's idea. For example, an error of one-tenth of an inch in the panels' dimensioning would become an inch after only a few panels had been joined together, and several inches by the time the erectors had placed the last of the dome's 575 panels. Also, there was the problem of sealing the joints, and even the dome's structural stability was questioned, with nothing but theory and Richter's personal conviction in its defense. Static load tests had been performed on a small segment of the dome to help verify these structural theories. But since no geodesic dome structure of this size or design had ever been built, no firm proof existed concerning its structural stability. At this point, however, there was no alternative but to go ahead. The designs had been completed; the fabrication shop was tooled up; and Henry Kaiser waited "patiently" on Waikiki Beach.

In January 1957, the dome's 2,330 parts were crated and shipped, via Kaiser *S. S. Silver Bow* from Permanente, California, to the Hawaiian Islands. On January 14, the 575th panel was bolted into place. It fit. On February 17, the auditorium was complete and at 8:30 that evening, George Barati, conductor of the Honolulu Symphony Orchestra, raised his baton as the 1,800 visitors to Hawaiian Village listened for the opening bars of the *Star Spangled Banner*. Meanwhile, Richter was 5,000 miles away, working on other domes which Kaiser would build.

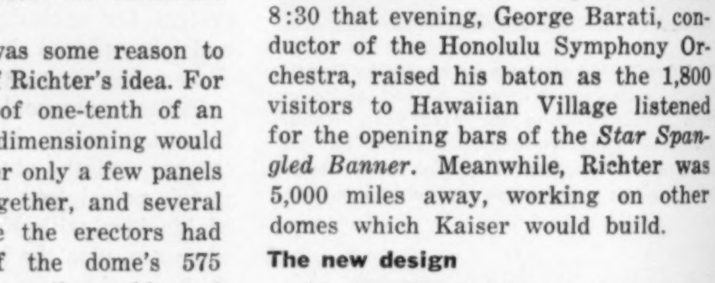
The new design

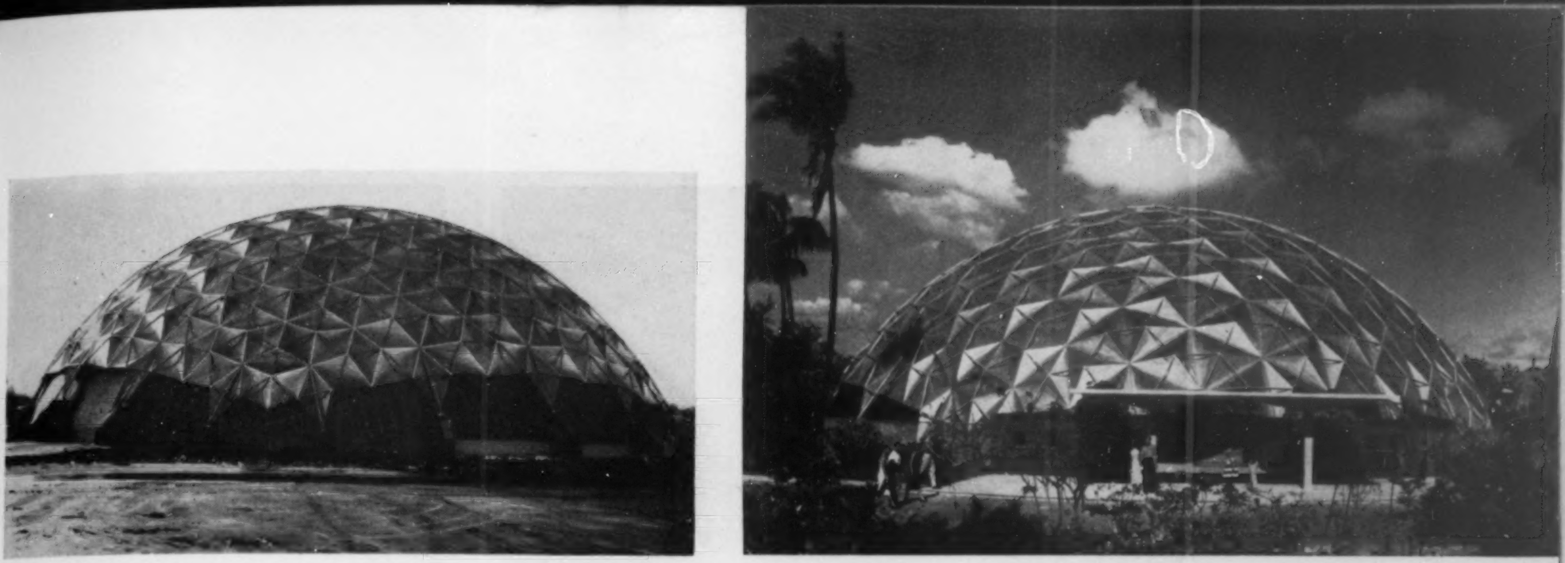
The first dome did not convince the Kaiser engineers that their every hypothesis was sound. In fact, it provoked several significant design changes, some to overcome certain problems in shipping, others to improve the roof's strength and weather-tightness. Future panels, for example, will be formed with fewer creases, eight instead of 12, which will make it possible to ship more panels per crate; other structural

NEW ERECTION METHOD uses balloon lift, which raises dome as new panels are added. This technique is faster than mast erection (right).

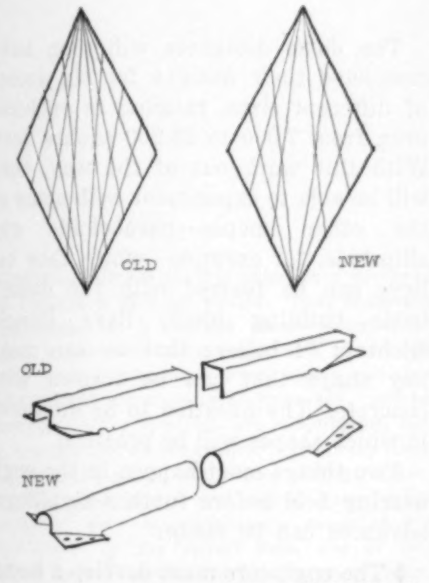


FIRST THREE DOMES were raised by a steel mast. As with the balloon, the crest panels are assembled first, then lifted as dome grows.





COMPLETED DOMES, a factory in Kansas (left) and an auditorium in Hawaii illustrate the dome's range of applications. Hawaiian dome points up the architect's importance: Welton Becket, who designed entrances, periphery, and interior at Hawaii, had to develop a wall system and cope with noise control and mechanical problems. Dome is not completely predesigned.



components, such as the panels' aluminum struts, have been redesigned to enhance the structure's load-bearing capabilities. The new tube-shaped strut is less subject to torsion failure. Also, a new sealing technique has since been developed; the original sealant was a Thiokol-based compound, commonly used in the building industry, which is squeezed into the joint, between panels. Kaiser will still recommend it, but will also suggest the new adhesive-backed aluminum tape which is applied over the surface of the joint.

The first four domes actually built are all basically the same in design. Each is formed from the same 575 panels; each encloses 15,300 square feet; each is approximately one-quarter of a sphere (the top half of a hemisphere), containing some 40,000 pounds of aluminum, and measuring 145 feet across, at its base. But the fifth dome, soon to be built as part of a shopping center in Caracas, Venezuela, will be a larger "semihemisphere," with 1,175 panels (of 14 different sizes, instead of ten), enclosing 25,900 square feet. It will be the first dome to incorporate the design changes mentioned above.

With the construction of the first four domes, the engineers believe they have demonstrated the basic soundness of the stressed-skin principle, i.e., the combining of frame with skin. The dome in Virginia, for example, has already withstood 65-mile winds, which churned through the new Virginia Beach convention center site before the dome had been enclosed. But other problems remain, such as the weather-tight integration of dome and exterior walls in a manner both economical and graceful; the efficient use of overhead space; the installation of mechanical equipment; the control of sound, from both interior and exterior sources. Some of these problems, such as sound "hot spots," are inherent in dome architecture and proper control often subtracts from the dome's clean appearance. All such problems inevitably fall to the architect for solution and the Kaiser dome, despite its package-prefab overtones, is no exception. The air-conditioning installation, for example, could add excessive cost to the dome if the installation were handled as in a conventional building, e.g., with overhead ducts. Still other problems, such as fire resistance, are under study now. Kaiser expects to get a one-hour fire rating this month, with a 1¼ inch vermiculite coating which is applied to the dome's inner surface. Without this rating, many codes would restrict occupancy to no more than 1,000 people.

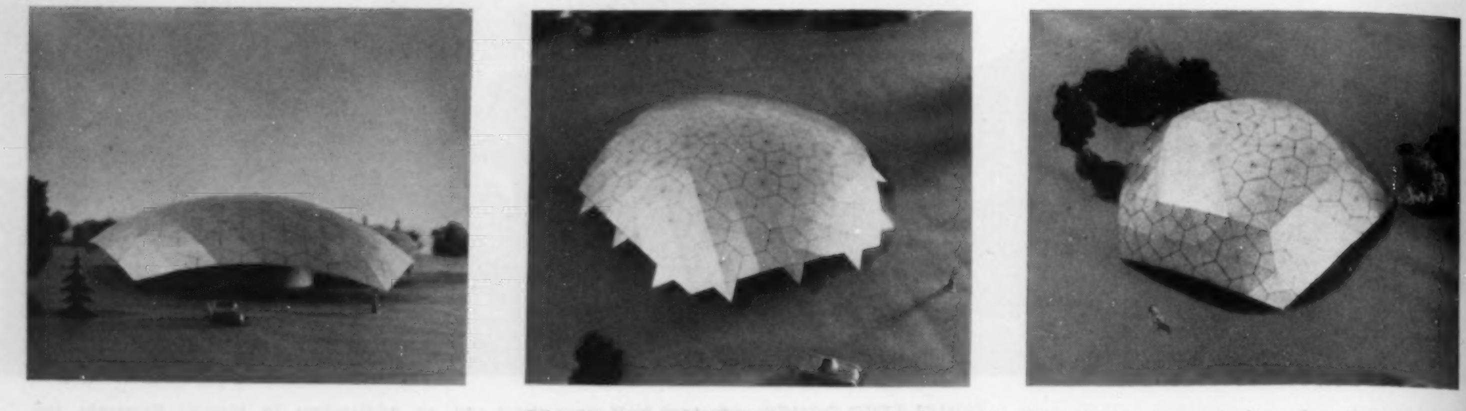
Sell that dome

The Hawaiian Village dome was probably the world's most publicized building in 1957. Kaiser men hailed it at luncheons of Kiwanis and Rotary, and at scientfiic gatherings, showing pictures of every important dome since the Neanderthal hut. They deluged publications with pictures, showed step-by-step erection of the dome in television commercials and in movie-house newsreels, and then took a second joy ride when Henry Kaiser joined hands last year with showmen Mike Todd and Sylvester (Pat) Weaver in a dome-building venture which promises "15 or 20" suburban dome-theaters in which Todd-Weaver entertainments will be "showcased." Such an extravaganza could be content with only one architect, who will, of course, be Frank Lloyd Wright. Indeed, if buildings, like movies, won Oscars, the Kaiser dome would win an award for Flamboyance, unopposed.

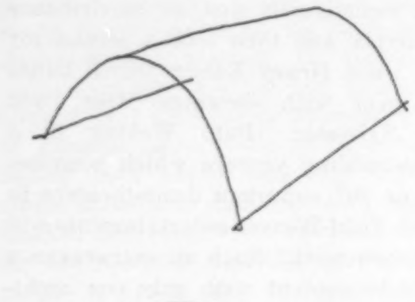
The result to date has been a flood of some 12,000 inquiries from potential customers, many of which are serious, e.g., school gymnasiums, shopping centers, bowling pavilions, gasoline stations. And by the end of this year it is quite possible that more than 50 domes will have been sold.

The danger, in fact, is that the dome will be strangled by indiscriminate selling, e.g., to the pizza palace, which would destroy its appeal in more dignified fields. Architects Perkins & Will, who were commissioned by Kaiser to investigate the dome's possibilities in school building, have cautioned: "How the dome is used will affect the reaction to it. We have tried to emphasize the importance of not cheapening it."

Such warnings are never harmful, though Kaiser seems from the beginning to have had its sights set high. Henry Kaiser's first dream for the dome was that it would serve as a civic auditorium: "There are 10,000 cities in the U.S. which do not have adequate meeting halls." Translated, this dream presents a glittering potential market for some 200,000 tons of aluminum. But its fulfillment will depend upon many things, including the architect's reaction to the dome. Thus far, his



DOMES FOR TOMORROW: The designers of the first Kaiser domes believe that their building block, the kite-shaped panel, can be adapted for a variety of shelter shapes beyond the traditional dome. Shown in models (above) are shelters which seem now to be feasible, although much of the design engineering is still to be done. At left, below, are more complicated shapes.



COMPOUND CURVES give a glimpse of the potential for free shapes in aluminum. Some, such as the simple vault (top sketch), should prove relatively straightforward in design. But other shapes, e.g., the undulating saddle (third from top), will require more complex mathematical computations. Thus far, Richter and his design group have only begun to investigate this broader field, but he sees no technical restriction ahead: "I believe that we can make any shape that can be formed with concrete."

reaction has been good, though some architects decry the inflexible dome form and scathingly ask whether everyone is now expected to live in domes. Emmit Ingram, of Perkins & Will, says that there was some reticence within his firm at first: "We wondered how we would modify this machine-age product to achieve a desirable school environment." He feels now that this can be done.

On costs, Perkins & Will accepts the dome as "a good, inexpensive roofing system," but the firm believes that enclosure and other items may counterbalance some of the economies of the roof. Norfolk Architects Oliver & Smith selected the dome for the Virginia Beach convention center because "we saw that we would gain about 500 people—for seating purposes—by using the dome." Says Herbert L. Smith III, partner in charge of the project: "I doubt that you would select the building for economy purposes." He says that such problems as attaching supplementary buildings tend to counterbalance the savings in the roof.

Smith brings up one further point: the dome's "package-deal aspect," a matter which has alarmed some in the architectural profession, who fear that Kaiser is bringing another package building into a field already crowded. Smith says that the dome itself (which certainly is a "package deal") does not minimize the architect's role in planning, design, and development: "With every new thing you come up with, you run into a multitude of little problems, and this is so different from anything before." Moreover, in support of this, Kaiser is not selling a complete package. Interiors, curtain walls, and foundation treatments are left to the architects. Kaiser supplies the panels and connecting elements to franchised fabricator-erectors, now 15 in number.

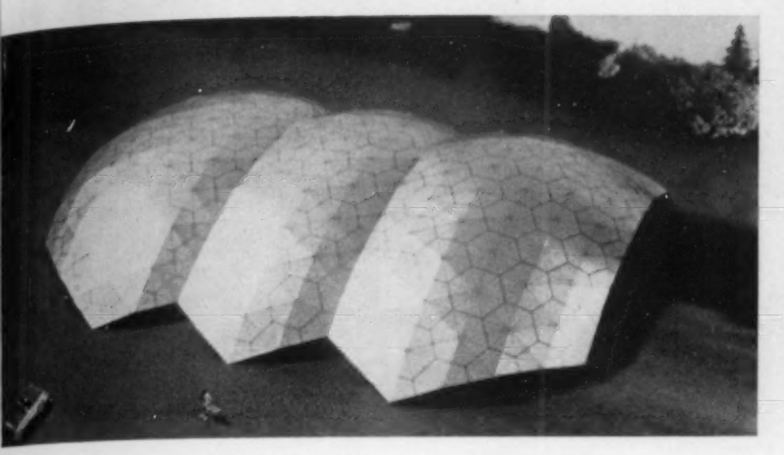
The dome designers will soon have completed their designs for six domes of different sizes, ranging in enclosed area from 7,000 to 31,200 square feet. With this work out of the way, they will be able to experiment with some of the other shapes—paraboloids and ellipsoids, for example—which they believe can be formed with the dome's basic building block. Says Donald Richter: "I believe that we can make any shape that can be formed with concrete. The question to be answered is which shapes will be practical."

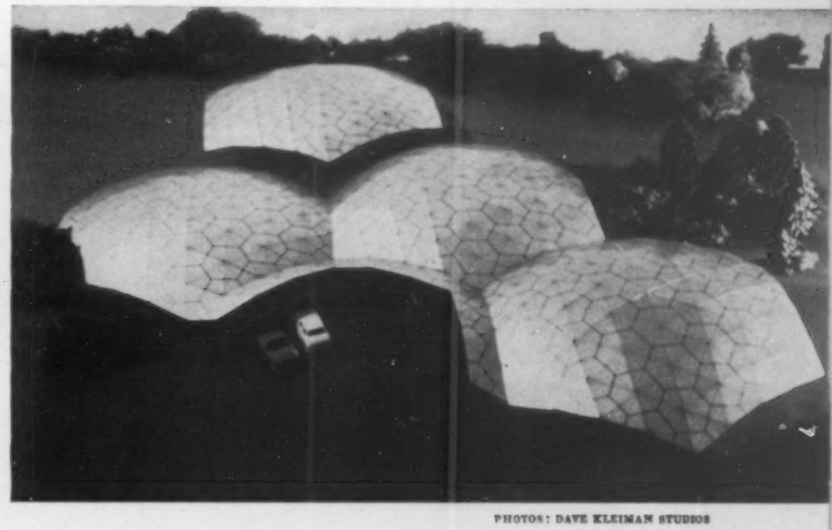
Two things must happen in the engineering field before further significant advances can be made:

- The engineers must develop a better knowledge of high-speed computers.
- They must develop a better system for analyzing shell structures, particularly odd shapes. "Free shapes can be made," Richter says, "but not much is known about their structural strength."

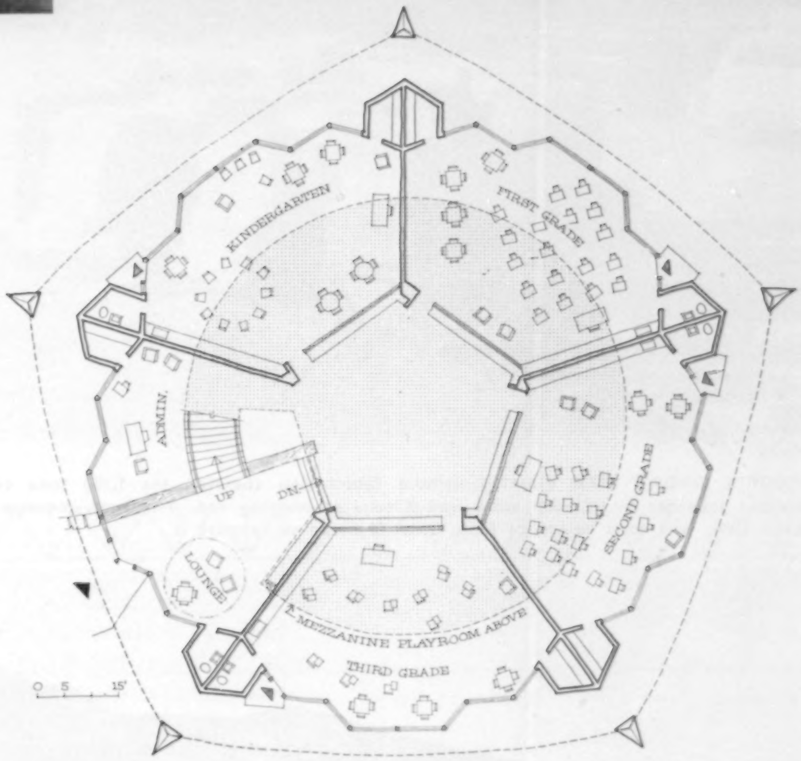
With computers, which will speed both design and analysis, the engineers will soon be developing a new metallic architecture, all of it stemming from Fuller's geodesics, but as different from the first geodesic dome as that dome was different from all others that had gone before. And because it will be metallic, this architecture will take advantage of prefabrication without falling victim to its restrictions. As Richter says: "Prefabrication in the mechanical sense does not have to mean rigidity in design solutions."

To date, the Kaiser company estimates it has invested something over $200,000 in geodesics. The dome's value as a Kaiser "identity" would seem to be worth that much in promotion value alone. And the resultant new shapes for tomorrow will likely prove again that good ideas carry generous rewards. END

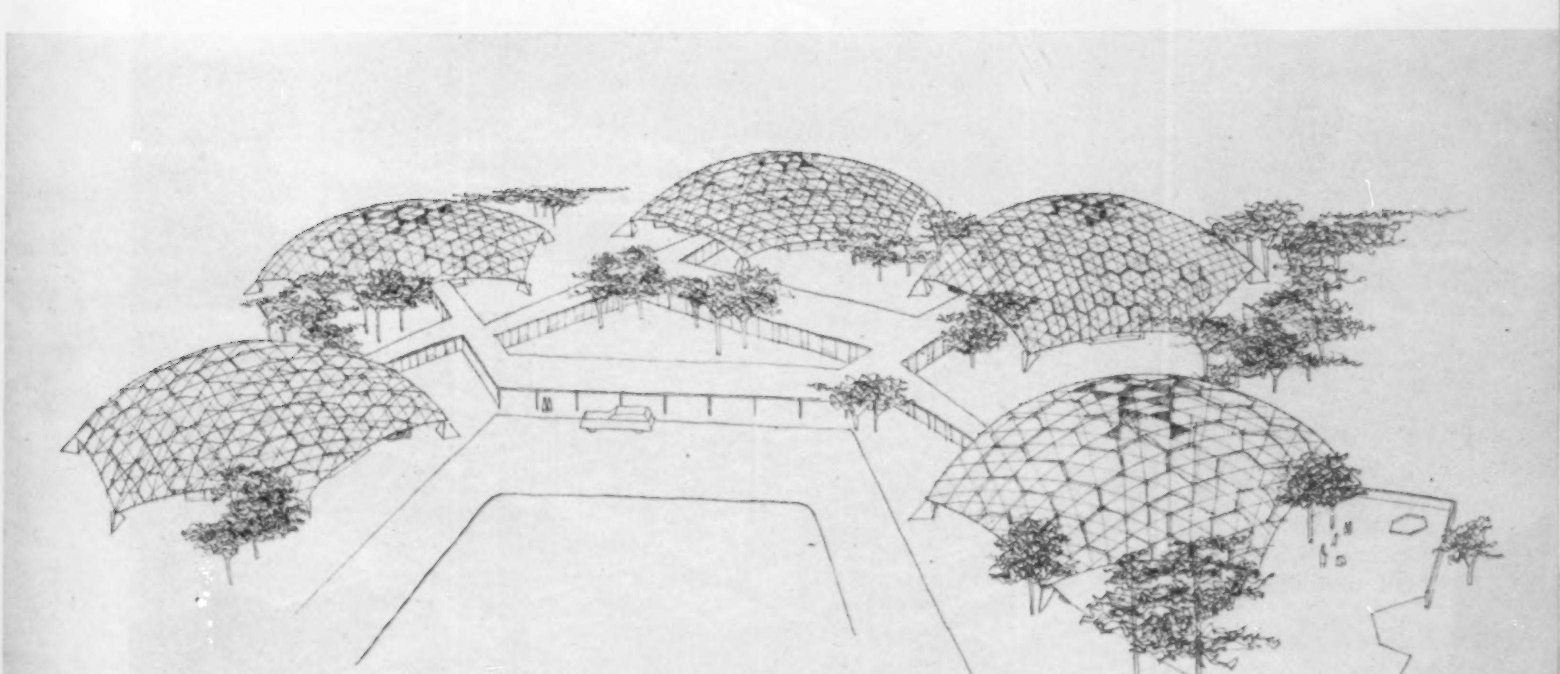


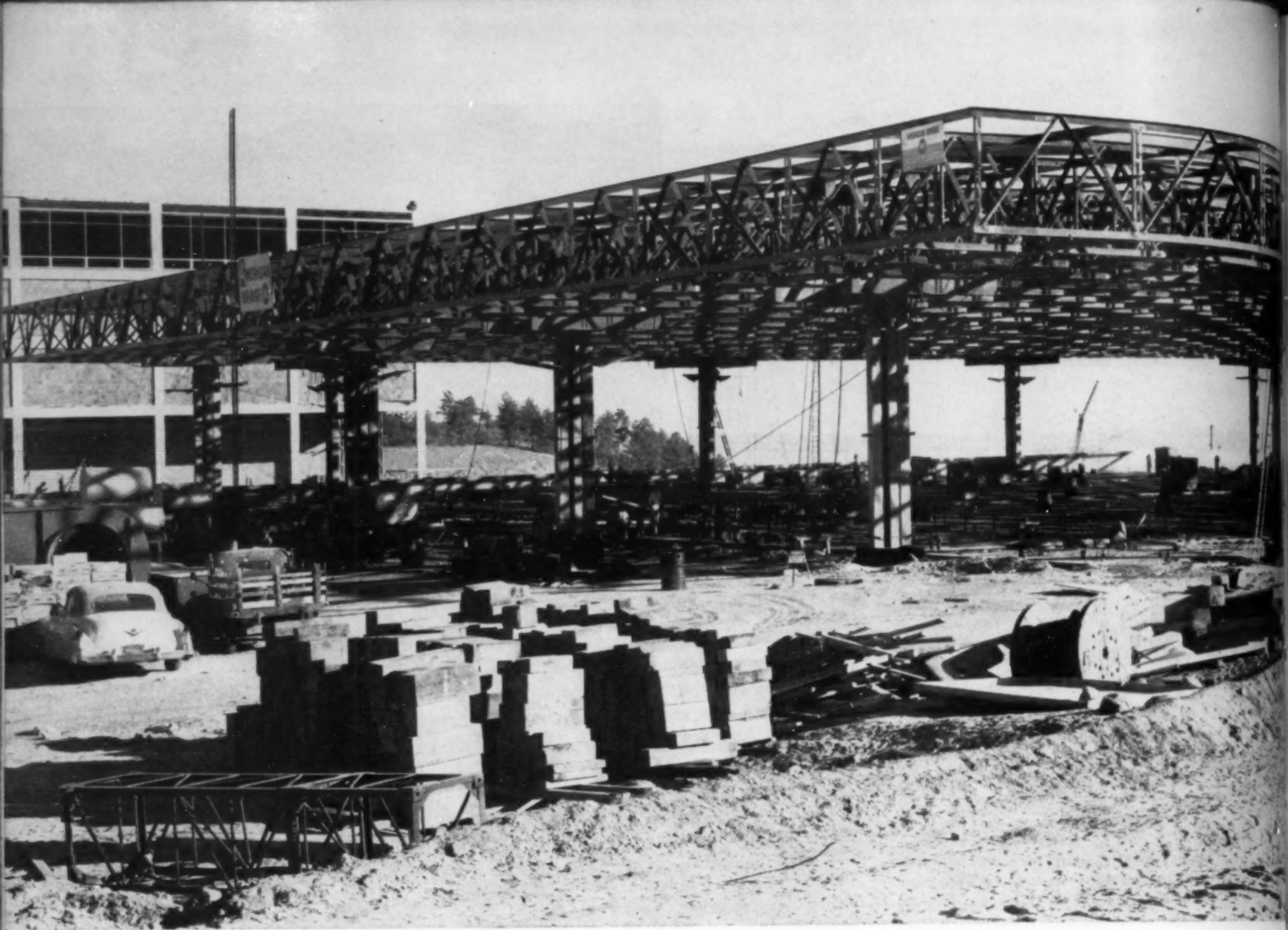


PHOTOS: DAVE KLEIMAN STUDIOS

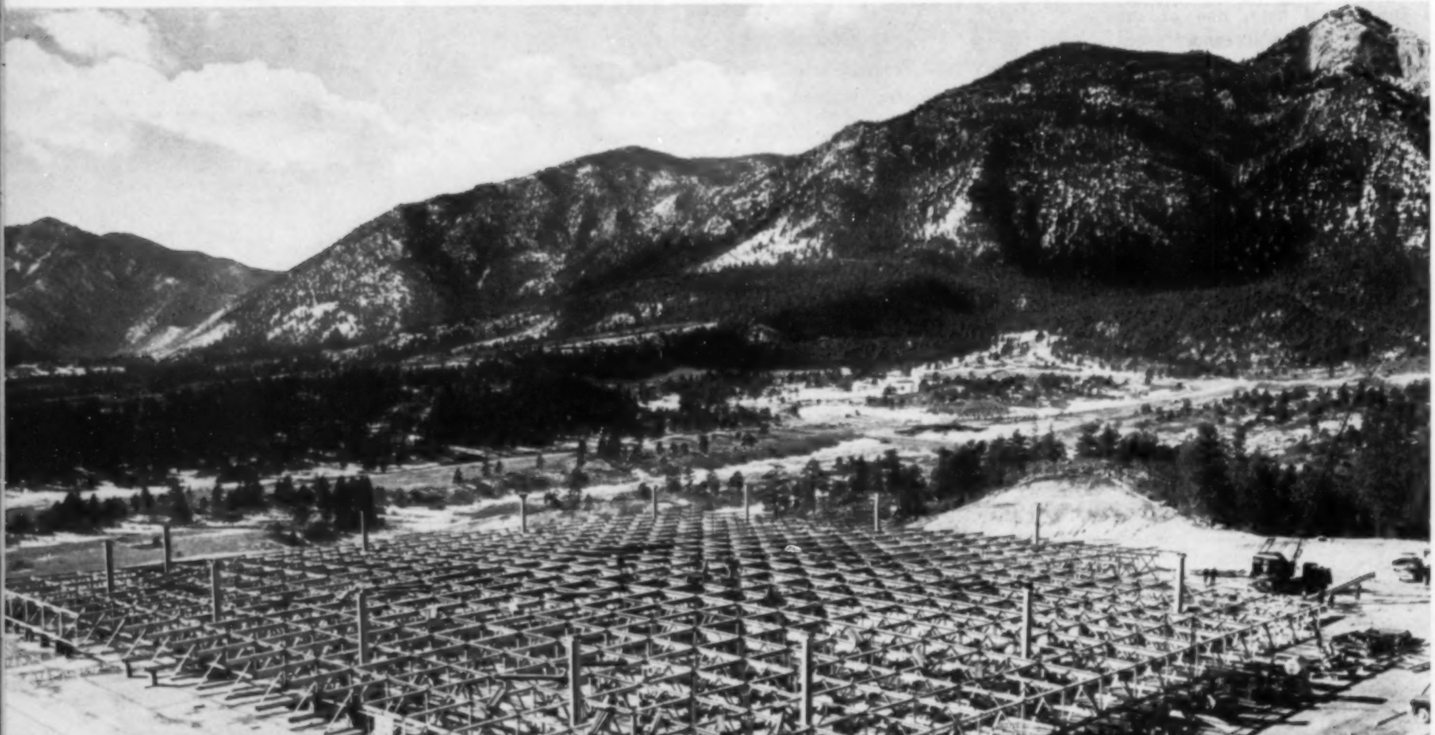

KINDERGARTEN
FIRST GRADE
ADMIN.
UP
DN
LOUNGE
SECOND GRADE
MEZZANINE PLAYROOM ABOVE
THIRD GRADE
0 5 15'

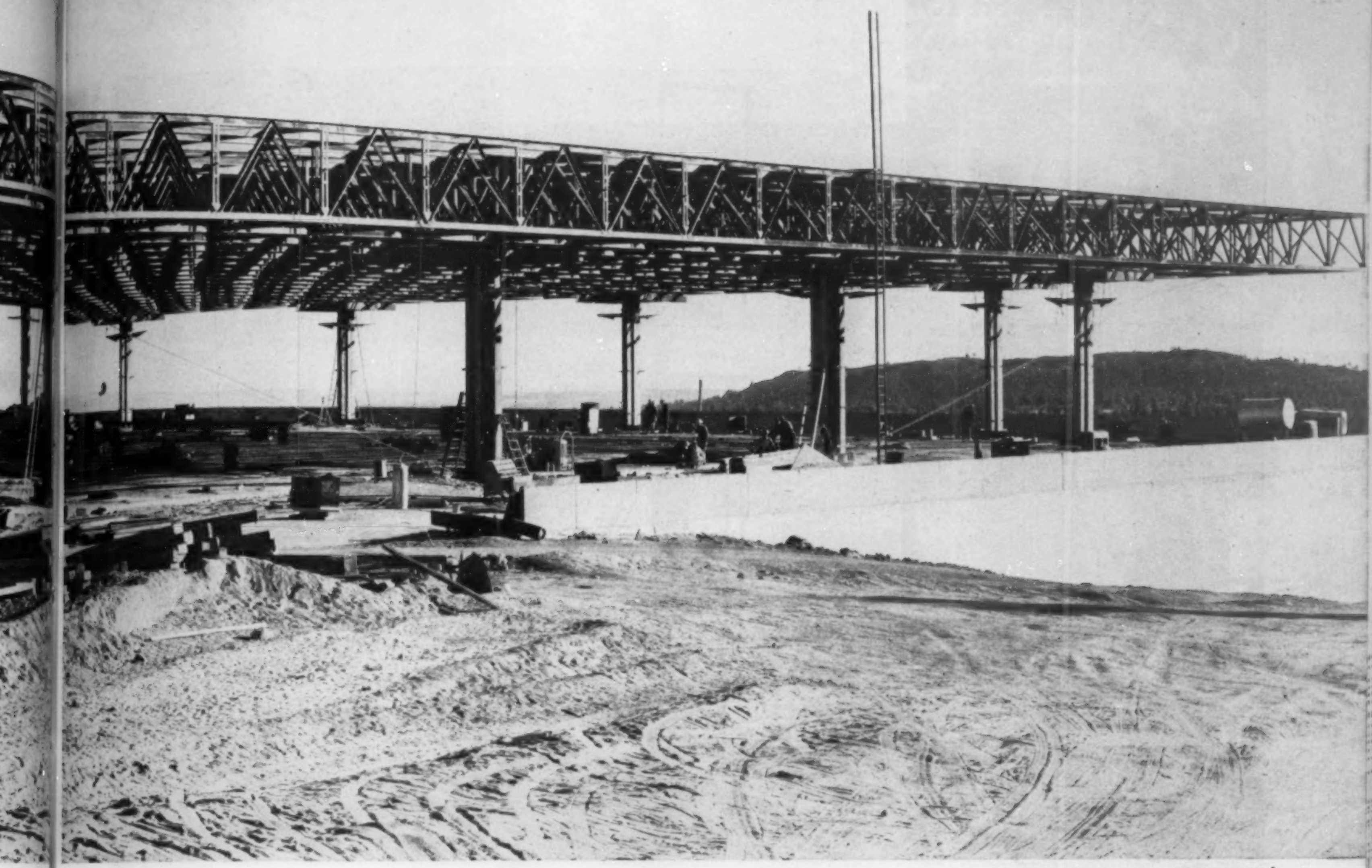
SCHOOL DOMES on this page were designed by Perkins & Will for Kaiser. They show the possibilities in a campus plan. Building at right would have four classrooms at ground level and a playroom area above (shaded area). Major problem, architects say, will be acoustics: "The solutions are not difficult, but it is a matter of economics." They say that the dome is a good, inexpensive roofing system, but that noise control and proper ground-level enclosure may counterbalance some of its economies. In the school field, one of the dome's great assets would be its short erection time. Each shell shown here could be built in three or four days. Four of the domes would cover classroom units, the fifth would be a multipurpose unit, comprised of administrative facilities, cafeteria, and auditorium.



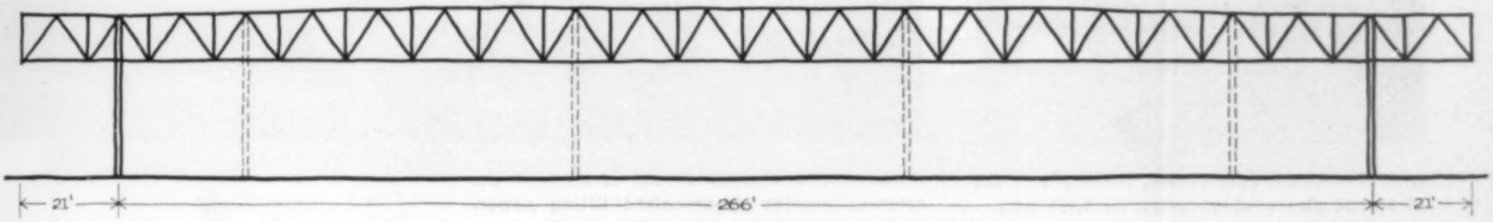


ROOF'S GREAT SIZE dictated ground fabrication (below). Its 1,150 tons of trusses were welded together by 27 men who used 7 tons of welding rod. The roof, measuring 308 feet on each side, was then raised 24 feet. Only 16 columns support it.





PHOTOS: STEWART'S



New way to raise the roof

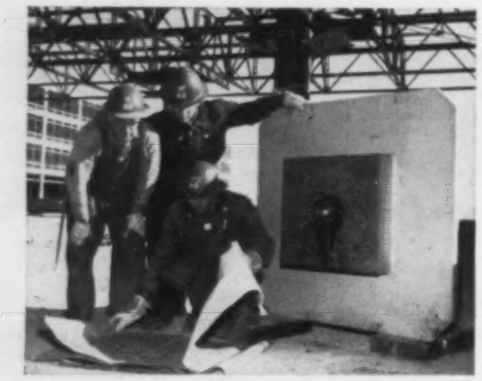
Two-acre roof for the new Air Academy was assembled on the ground then jacked into place. Clear span: 266 feet.

The huge steel-grid roof frame of the Air Force Academy's Cadet Dining Hall near Colorado Springs was assembled on the building's floor slab, then lifted into place by hydraulic jacks, using a technique similar to precast concrete lift-slab construction. The square roof measures 308 feet on a side, covers just over two acres, weighs 1,150 tons, has a clear span of 266 feet yet rests on only 16 columns. It is the first structure of this type to be jacked into place. The largest known concrete slab ever lifted weighed more, 1,466 tons, but covered only about one-third the area of the Air Academy roof: 32,000 square feet versus 94,864 square feet. And, of course, concrete slab construction would require many more columns, with consequently less free span.

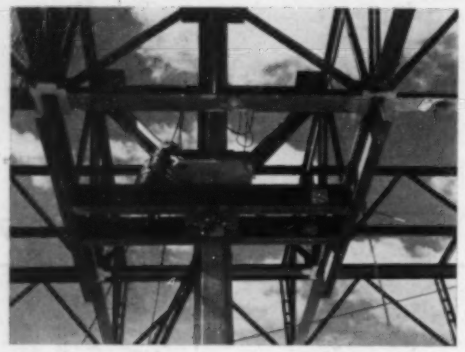
The roof frame is a grid-truss system, in which trusses run both lengthwise and crosswise, intersecting at right angles. It was designed by Skidmore, Owings & Merrill. Because of the roof's vast size, it was judged most feasible to fabricate at ground level and then jack the roof into place, 24 feet above ground. It was lifted in six hours, by the Vagtborg Lift Slab Corp., under subcontract to the fabricator-erector, U.S. Steel's American Bridge Division.

Hydraulic lifting jacks were placed atop the 9-ton steel columns, and their

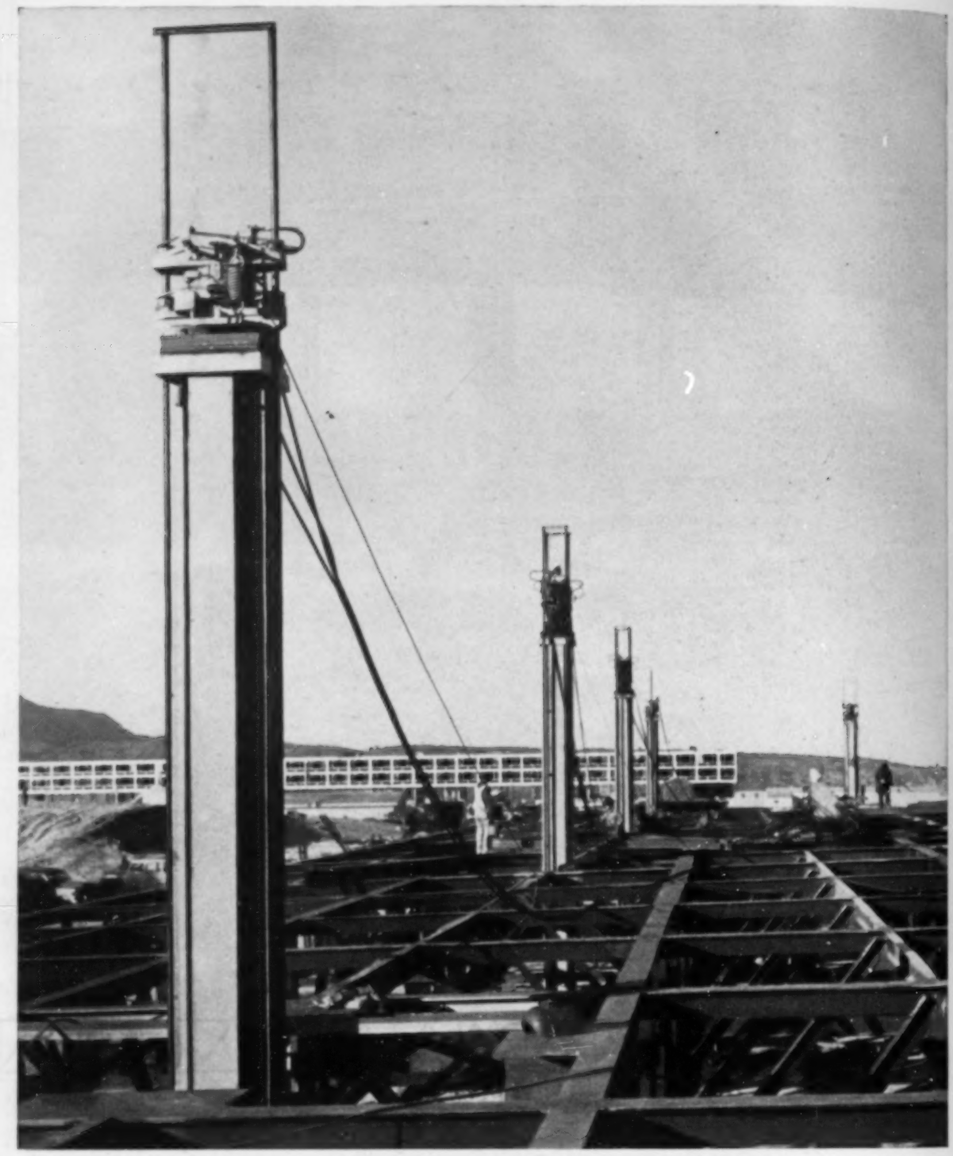
FLOATING ROOF: Ball joint plates sit atop each of the building's 16 columns.



SOCKET PLATE (above) fits over ball joint plate, allowing structure to move slightly.

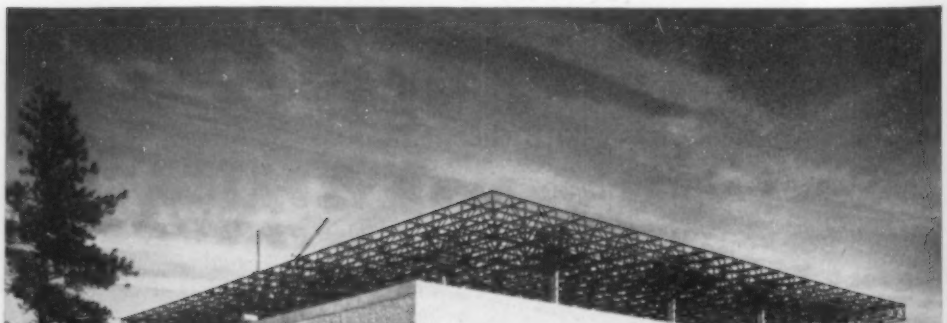


GIANT TRUSS, once raised, is welded to the 16 socket plates which carry its 1,150 tons.

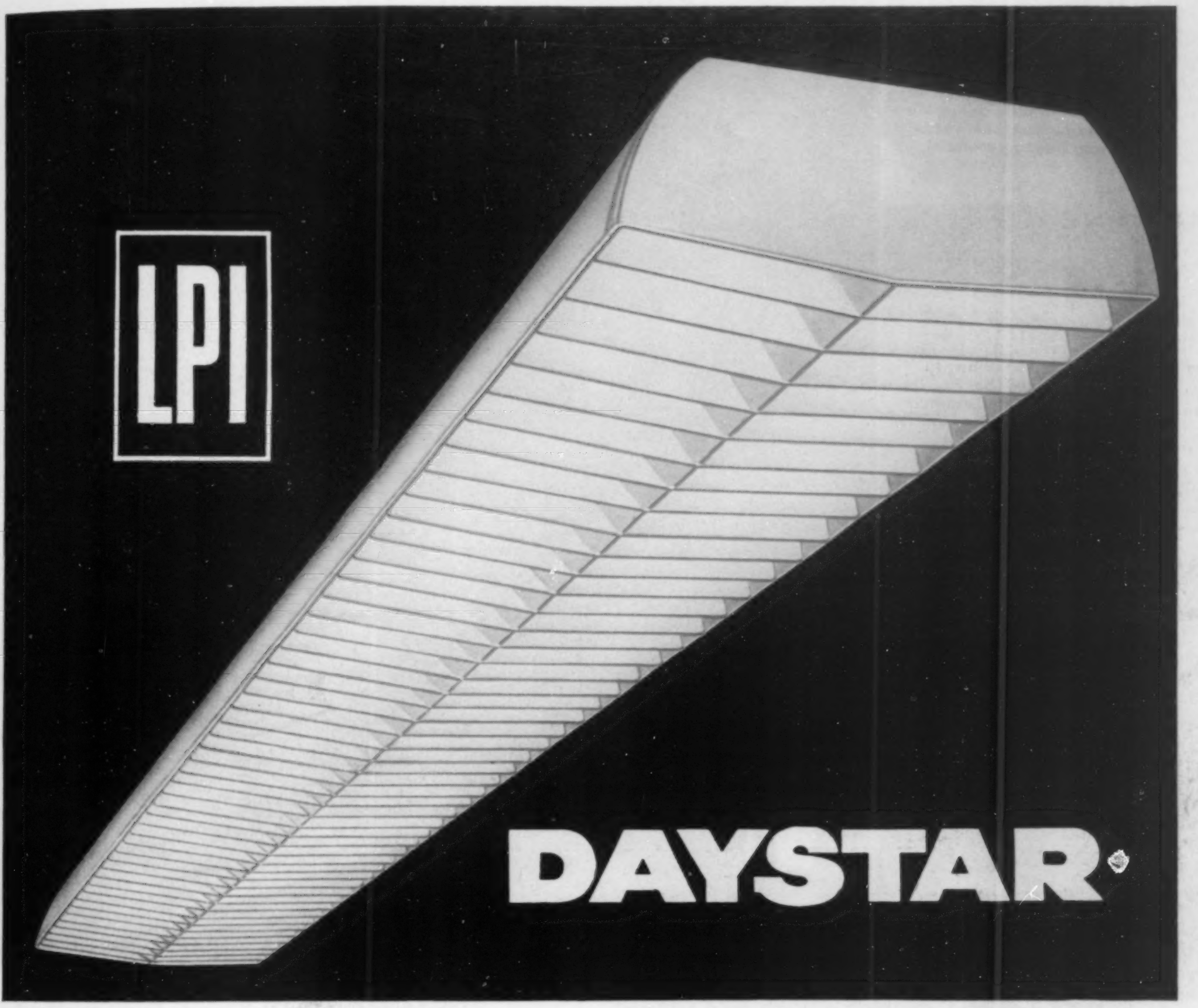


HYDRAULIC JACKS on top of each of the columns provide synchronized lifting power. Each jack has a capacity of 75 tons. The jacks are controlled from four console units which are linked together electrically.

lifting action was controlled and synchronized from four console units, interconnected electrically, which were placed on top of the roof and rose with it as it was lifted into position (above, right). When the roof had been lifted 2 inches above its final position, temporary timbers were used to support the roof while the jacks were removed and 2-ton caps were placed atop the columns. Steel braces, which were welded to the caps and the roof grid, supported the structure after the temporary timber supports had been removed. The technique may mark a new and faster method for fabricating and raising extremely long-span steel roofs. END



RAISED ROOF of the dining hall projects 21 feet beyond the columns. Glass, set in aluminum framing, will enclose the hall on three sides. The fourth side of the building, where the kitchens are located, will be enclosed with precast marble chip panels. The building's large basement area will be used for food storage and preparation.



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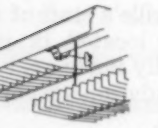
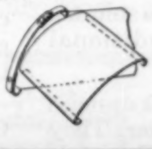
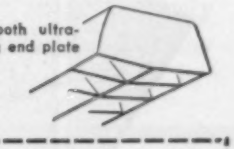


louvers raise or lower on safety chain for ease of maintenance



plastic side panels easily removed without use of tools

38% of light directed up; 62% directed down



simplified smooth ultra-thin appearing end plate

LIGHTING PRODUCTS INC., HIGHLAND PARK, ILLINOIS

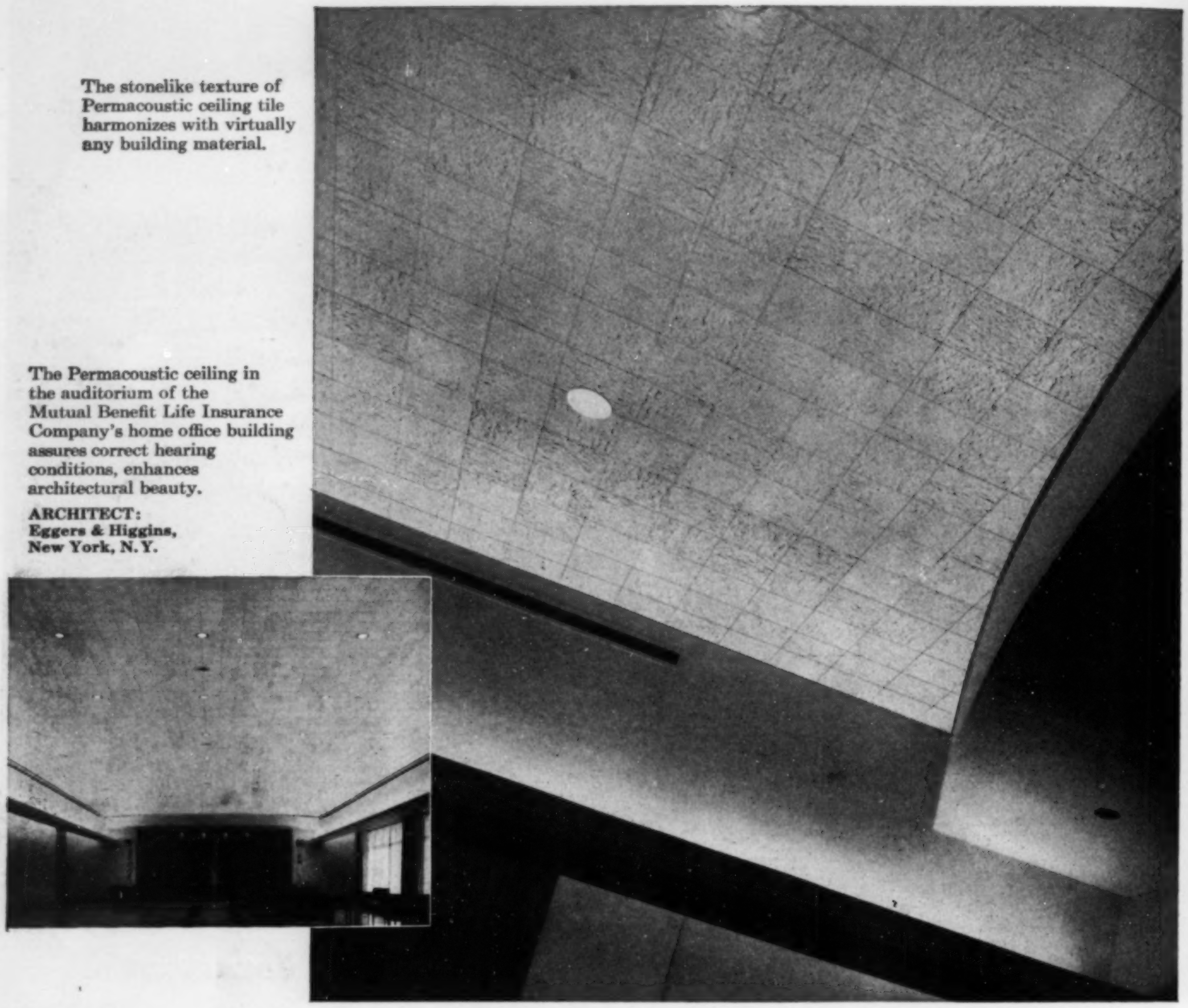
LIGHTING PRODUCTS INC., No. 1503
Dept. 2-C, Highland Park, Ill.

Name____________________________________

Firm______________________________________

Address___________________________________

City________________________ State____________



The stonelike texture of Permacoustic ceiling tile harmonizes with virtually any building material.

The Permacoustic ceiling in the auditorium of the Mutual Benefit Life Insurance Company's home office building assures correct hearing conditions, enhances architectural beauty.

ARCHITECT:
Eggers & Higgins,
New York, N.Y.

For Noise-Quieting and Decorative Beauty

MUTUAL BENEFIT LIFE

installed Johns-Manville Permacoustic® Ceilings

J-M Permacoustic ceiling panels assure quieter working conditions.

The J-M Permacoustic panels in ceilings throughout the new twenty-story Mutual Benefit Life Insurance Company building, Newark, N. J., provide a stonelike fissured surface with great architectural appeal. Here is a decorative acoustical tile suitable for either modern or traditional architectural design.

Permacoustic ceilings soak up noise like a sponge soaks up water. They keep noise from spreading. The result is comfortable quiet and an increase in business efficiency.

Made of noncombustible mineral wool fibers, Permacoustic ceilings reduce fire hazard. They help safeguard building investment costs.

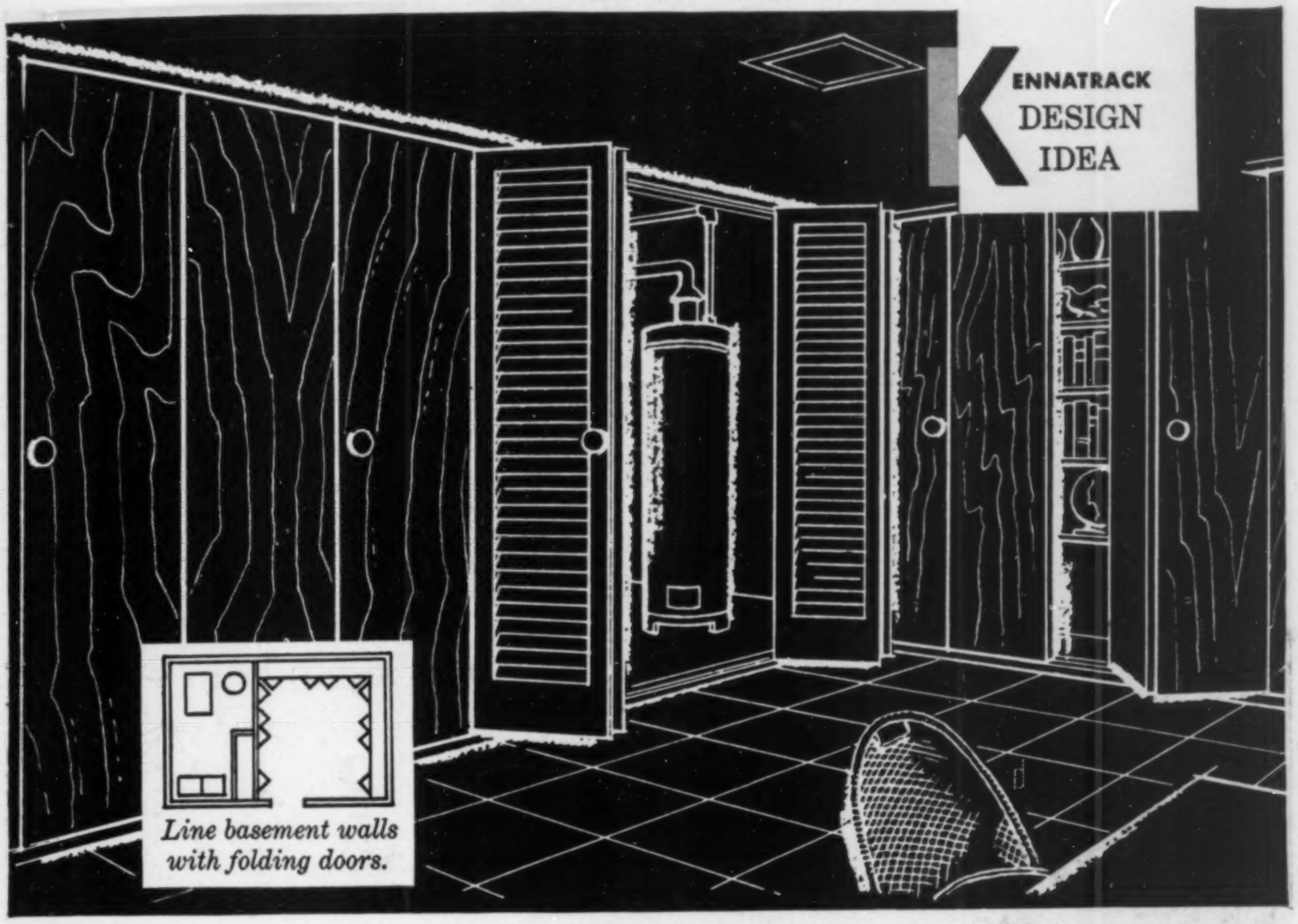
Johns-Manville's staff of acoustical engineers, located in principal cities, will gladly make analyses and give recommendations on your acoustical problems.

For a free copy of booklet "Sound Control," write Johns-Manville, Box 158, New York 16, N. Y. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

JOHNS-MANVILLE

JOHNS-MANVILLE JM PRODUCTS

KENNATRACK DESIGN IDEA


Line basement walls with folding doors.

BEAUTY AND UTILITY

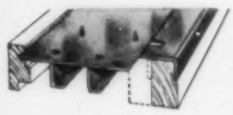
with folding door hardware by Kennatrack

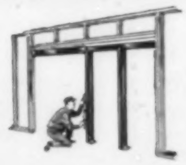
Folding doors do triple duty: provide smart new look, storage area, finish at cost of paneling

Sound-conditioned Kennatrack hardware for folding doors provides an economical way to divide a room with a smart new look and add extra storage space.

Look how effectively folding doors may be used to bring a new look to a basement. In fact, any room—bedroom, porch, family room—gains beauty and utility through low-cost folding doors with hardware by Kennatrack.

This is only one of the many new ideas being developed by a full-time staff of designers and engineers at Kennatrack, world's largest *exclusive* manufacturer of hardware for gliding and folding doors. Write us today for full information about this idea. We'll be pleased to help you; we'll also be glad to send you our *free* catalog so you can see for yourself why more architects specify Kennatrack *Gliding* Door Hardware than any other line.


KENNA-PAK. One-piece header assembly (with track installed) for quick and easy installations of by-passing doors.


KENNAFRAME. Original, patented all-steel frame (with aluminum track) for pocket doors. Goes up in minutes.

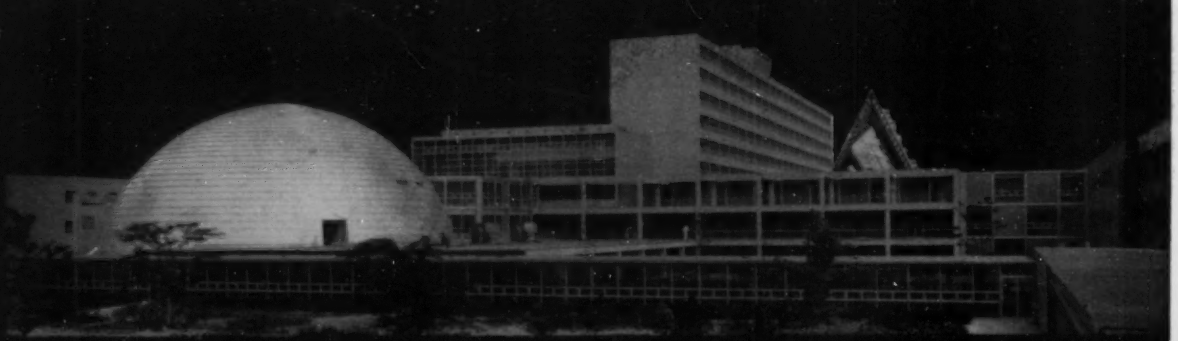
For quiet and for quality

KENNATRACK®

SOUND-CONDITIONED GLIDING DOOR HARDWARE

Kennatrack Corporation, Elkhart, Indiana
A subsidiary of Ekco Products Company

©1957



a **most** unusual dome

crafted by Overly

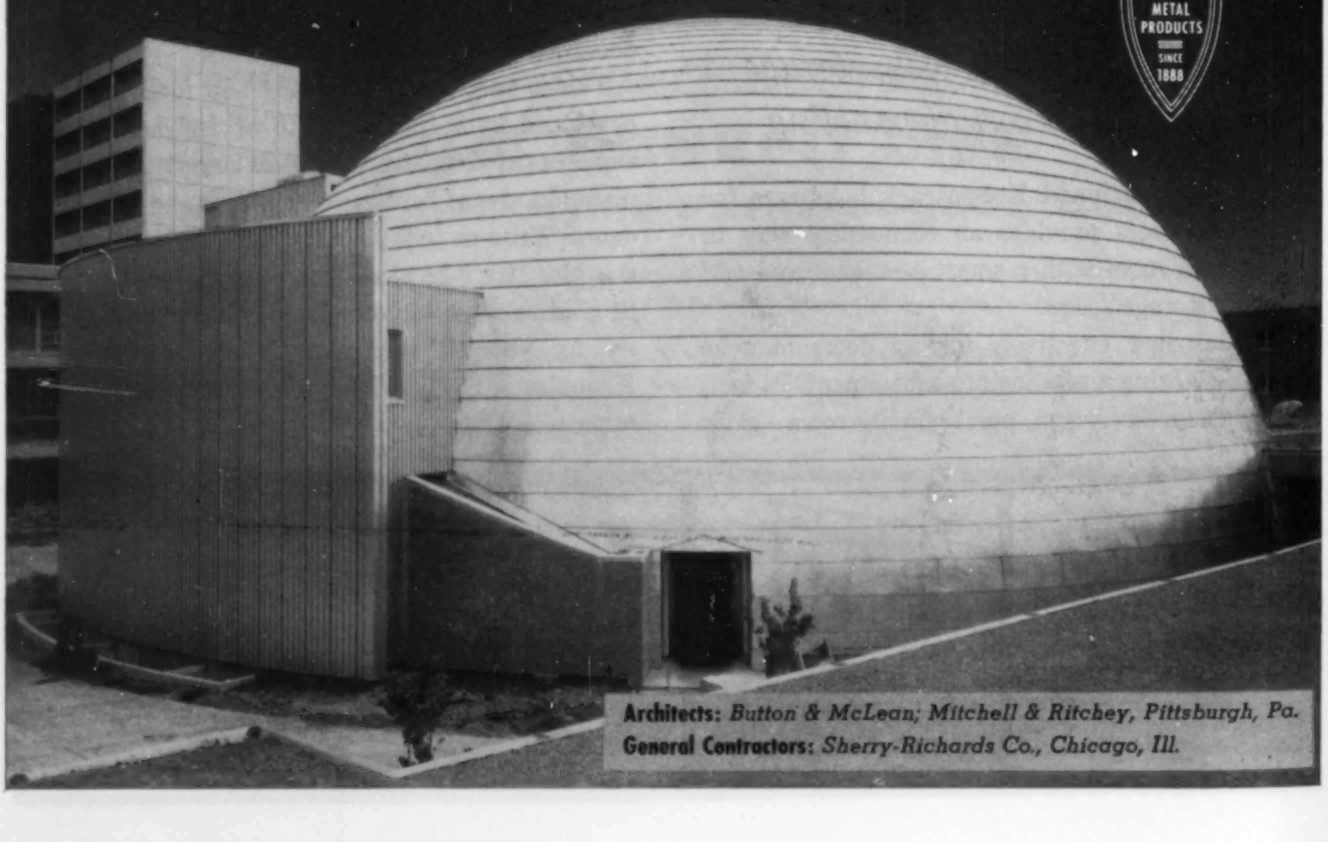
This is the aluminum dome auditorium for the new multi-million dollar John J. Kane Hospital, located just outside Pittsburgh's city limits. It is a *most* unusual dome: architects' plans called for a shingle-type roof with 1½" butts. Roof lines had to run horizontal to the axis — instead of parallel, as is the norm.

To satisfy requirements, we designed roof sheets conforming to the radii of the dome, then built the job just like an igloo. Joint constructions and concealed battens are a modification of the Overly-Goodwin batten joint. Aluminum used: 18 gage, mill finish. Dome size: 110′ dia.; 55′ high — a perfect half ball.

This is another example of how Overly tackles the tough ones. Know us better, now; send today for our new catalog 8b-Ov.

OVERLY MANUFACTURING COMPANY
GREENSBURG, PENNSYLVANIA
LOS ANGELES 39, CALIFORNIA

METAL PRODUCTS
SINCE
1888



Architects: *Button & McLean; Mitchell & Ritchey, Pittsburgh, Pa.*
General Contractors: *Sherry-Richards Co., Chicago, Ill.*

North Ward School

NORTH WARD
SCHOOL

PORTLAND CEMENT ASSOCIATION PHOTOS

For Low Cost Beauty

Architectural Concrete and Concrete Masonry made with Ideal Cement provide a BEST BUY for Schools

An economical dual application of concrete was developed for the construction of the North Ward Elementary School in Superior, Nebraska. On both the inside and outside of this handsome school building, concrete walls were left exposed.

Architectural concrete exterior walls provide an attractive, low-annual-cost exterior treatment for the entire building. On the inside, lightweight concrete masonry walls fulfill a load-bearing as well as a decorative purpose. The interior ceiling was constructed of exposed concrete filler-blocks to provide additional economies when used with the thin concrete roof slab.

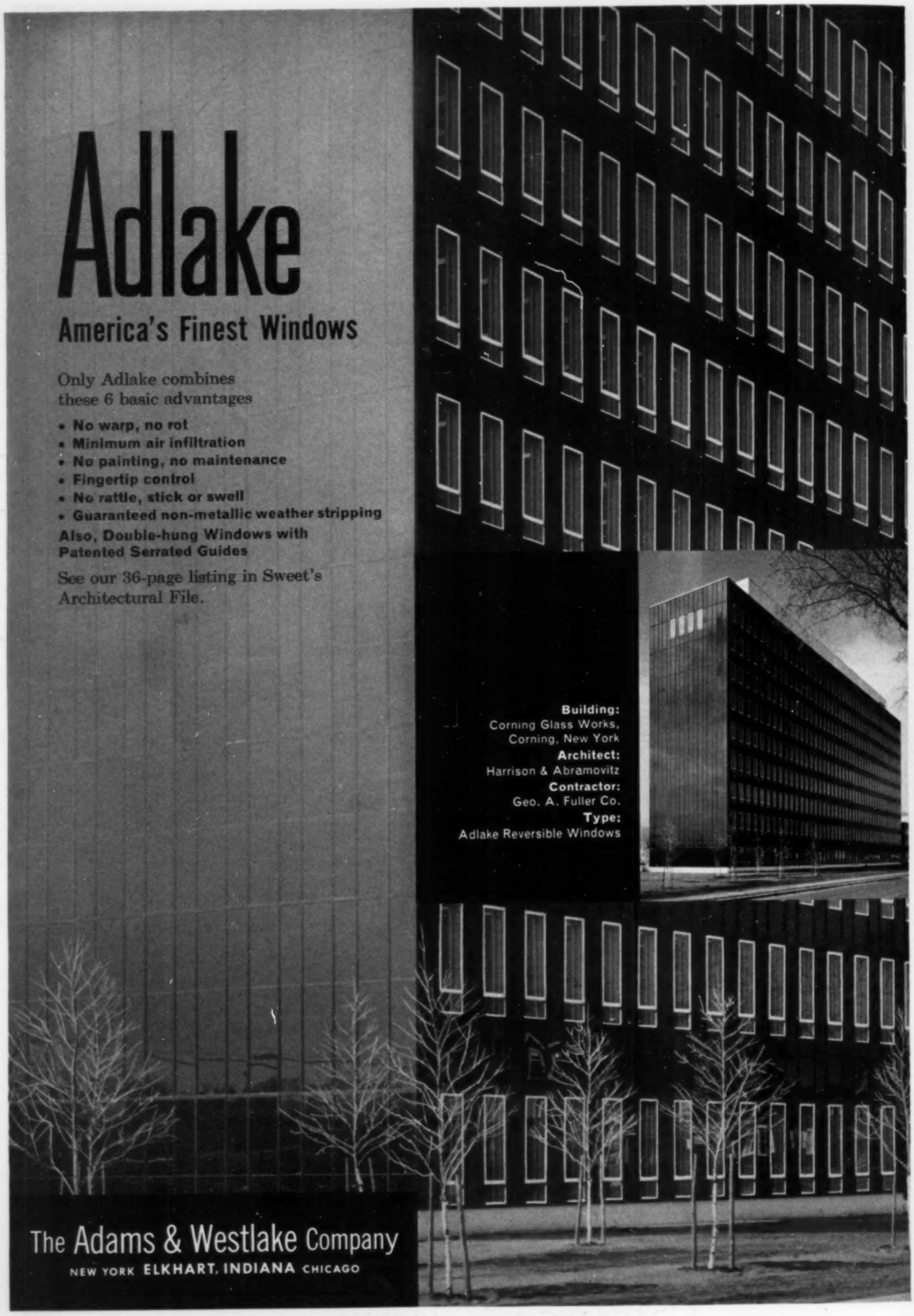
This unique school building provides a total of 22,750 sq. ft. of space at a cost of $11.33 per sq. ft.—is an outstanding example of the way architectural concrete and concrete masonry provide beauty, economy, and long life with minimum maintenance. Ideal Cement was used exclusively for all concrete and concrete masonry units in North Ward Elementary School.

PORTLAND IDEAL CEMENT

IDEAL CEMENT COMPANY

DENVER, COLORADO

15 Plants and 4 Terminals Serving
Some of the Most Rapidly Growing Areas of the Nation



Adlake

America's Finest Windows

Only Adlake combines
these 6 basic advantages

- **No warp, no rot**
- **Minimum air infiltration**
- **No painting, no maintenance**
- **Fingertip control**
- **No rattle, stick or swell**
- **Guaranteed non-metallic weather stripping**

**Also, Double-hung Windows with
Patented Serrated Guides**

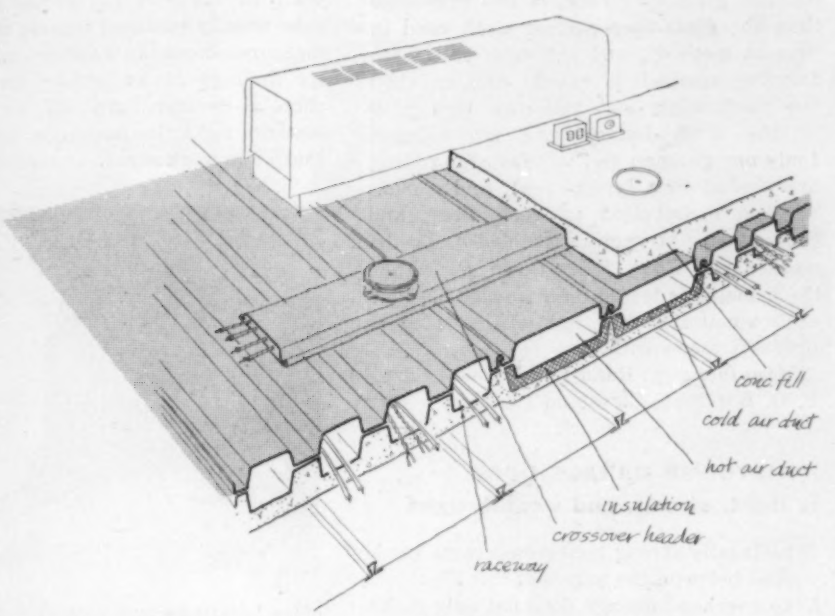
See our 36-page listing in Sweet's
Architectural File.

Building:
Corning Glass Works,
Corning, New York
Architect:
Harrison & Abramovitz
Contractor:
Geo. A. Fuller Co.
Type:
Adlake Reversible Windows

The Adams & Westlake Company
NEW YORK **ELKHART, INDIANA** CHICAGO

Products

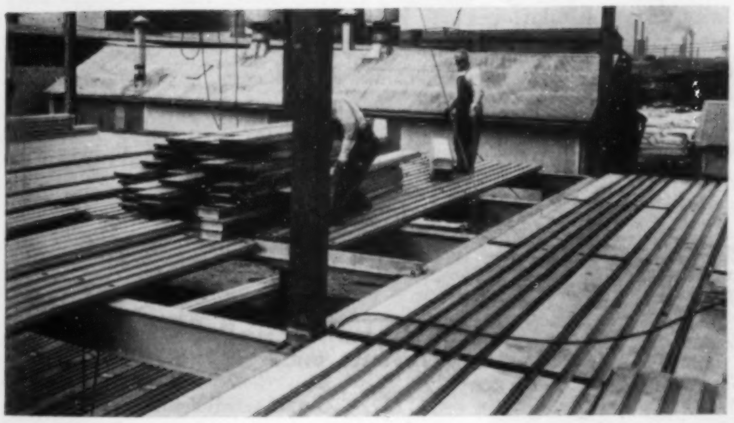
Multipurpose steel subfloor . . . sprayed reinforced plastic . . . automatic light saver



CELLULAR STEEL FLOOR
has built-in hot and cold air ducts

By giving an old idea a new twist, the H. H. Robertson Co. has come up with the *Q-Air Floor*, a load-bearing steel subfloor that should cut construction costs and save interior space in future buildings. The idea—facing corrugated steel sheets back to back to form built-in raceways for electric wiring—dates back 25 years. The new twist: two raceways in each floor section are expanded to serve as distribution ducts for high-velocity air conditioning and heating. Thus, by placing lateral ductwork in the structural floor slab itself, the need for ceiling or wall air ducts is eliminated and ceiling-to-floor dimensions can be reduced, according to the manufacturer, 8 to 16 inches (or enough space to permit a bonus of one extra story in a 20-story building). Such a space saving, of course, provides immediate economies in footers, steel beams, wall materials, etc. *Q-Air Floor* price has not yet been announced.

Manufacturer: H. H. Robertson Co., Farmers Bank Building, Pittsburgh, Pa.

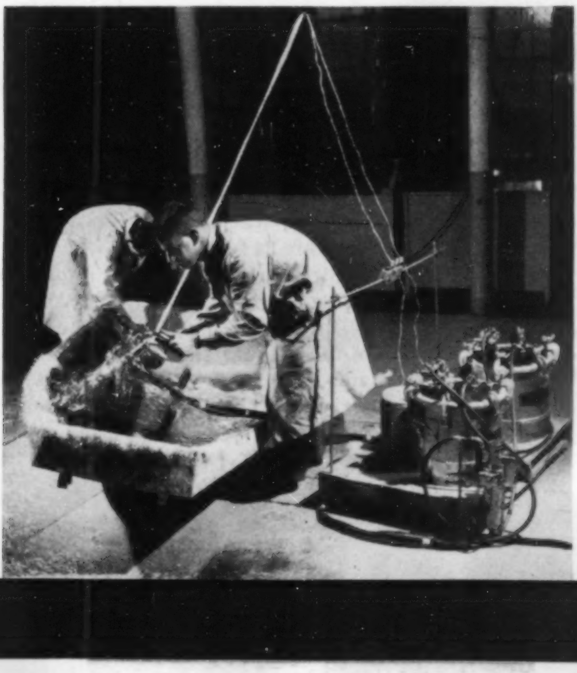


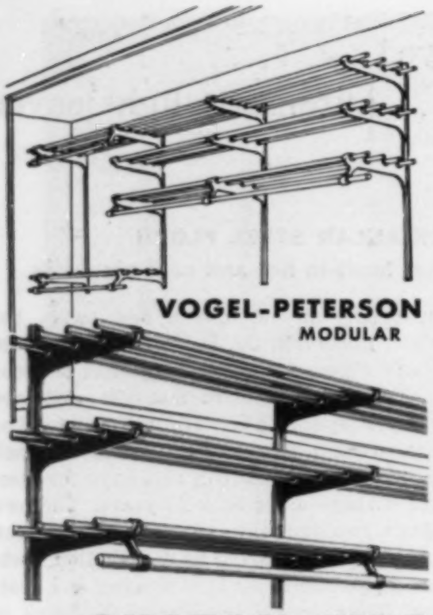
REINFORCED PLASTICS
sprayed from glass-chopping gun

A variety of reinforced plastic items such as curtain walls, ceiling panels, skylights, air-conditioning ducts, bath tubs, sinks, and swimming pools will soon be factory finished, or fabricated on the job, by a unique method now being used in the manufacture of plastic boats and caskets. The key to the method is a 9-pound electric spray gun that can deliver up to 15 pounds of reinforced plastic per minute, at a cost of about $1 per pound. For one plastic boat firm, use of the gun has cut material costs and expedited production almost 50 per cent.

The twin-nozzled gun, introduced by Rand Development Corp. of Cleveland, chops up continuous glass-fiber rovings (or rope) and sprays them, along with plastic resins, onto any conventional mold or surface. Two streams of resin blended with the necessary accelerators and catalysts, plus the pulverized glass fibers (which spew out between the nozzles), combine in the air and deposit a fluffy, resin-saturated, glass-fiber coating. This coating is then rolled down by hand to eliminate trapped air bubbles and to create a smooth laminate 1/16 inch thick. Further thicknesses are attained by building up additional layers in the same way. Each layer gels in a few

continued on page 136



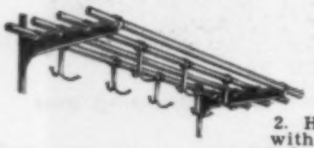


CUSTOM-LINE
***Aluminum* HAT and COAT RACKS**

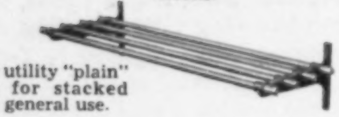
Tailored to fit any given wall area. Die cast aluminum brackets adjustable to exact centers . . . also adjustable as to height without removing from wall.

3 BASIC SHELVES

1. Hat shelves with hanger bar for coat hangers.



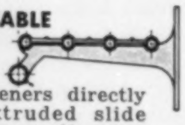
2. Hat shelves with staggered cast aluminum coat hooks.



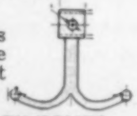
3. Hat or utility "plain" shelves for stacked tiers for general use.

RIGID OR ADJUSTABLE MOUNTING

Brackets mount with standard fasteners directly on wall or in extruded slide mountings that permit easy change of heights.



Cast aluminum coat hooks can be staggered along the bottom shelf to give great capacity in small space.



MODERN ANODIZED FINISHES

Tubing comes in clear, or gold color, deep etched anodized finishes . . . with closed ends. Cast aluminum brackets and hooks come in black, silver luster or brass hammertone finishes. All combinations available.

FLOOR LAYOUT SERVICE

Let our cloakroom and checkroom specialists suggest equipment requirements and efficient layout. Just send outline of available space, capacity desired and nature of load. No obligations, of course.

Write for Catalog CL 48 113

VOGEL-PETERSON CO.
1121 W. 37th St. • Chicago 9, Ill.

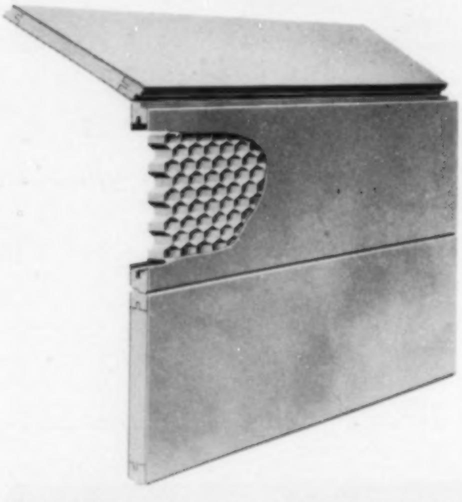
minutes; and the finished laminate drys to handling hardness in one hour.

By comparison, present laminating methods—where successive layers of plastic and glass fiber are layed-up by hand—seem costly, complicated, and time-consuming. The basic material used in the new process, common glass-fiber rope, is less expensive than the glass-fiber mat or cloth used in present methods, and the new, on-the-job forming method is much simpler than the preforming and tailoring now done in the shop. Labor costs are reduced (only one gunman and two men for rolling are needed on a typical job), and a more uniform distribution of glass fiber, and thus greater strength, is achieved. Trademarked the *Rand Fiber-Resin Depositor*, the machine is leased on a royalty basis of approximately 3 per cent of the value of products made with it.

Manufacturer: Rand Development Corp., P. O. Box 3855, Cleveland 19, Ohio.

HONEYCOMB GARAGE DOOR is light, strong, and weathertight

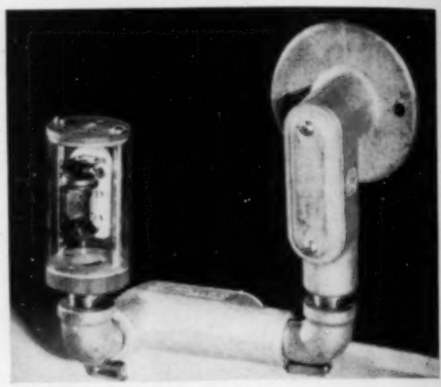
Structurally strong honeycomb cores sandwiched between the panels of this *Weather-King* overhead garage door not only make the total unit 15 per cent lighter in weight (and so, easier to handle) than 1¾ inch plywood doors, but also create insulating dead air cells that cut temperature transfer substantially. (The door's insulation factor is 0.257 compared with 0.495 for standard ¼-inch plywood doors.) Faced with retempered hardboard and closed (top, bottom, and side) with douglas fir, the honeycomb cores are made of heavy kraft paper, phenolic resin-impregnated against moisture and decay. The panels are guaranteed not to splinter, split, or delaminate due to weather exposure and are said to have an impact resistance comparable to plywood. Standard sections are 24 feet 2 inches wide and 1¾ inches thick, but can be furnished in any height. Retail price for a 10 foot by 10 foot door: $250 including special cam-action hardware that forces the door tight against the jamb.



Manufacturer: Barber-Colman Co., 115 Loomis St., Rockford, Ill.

ELECTRONIC BRAIN regulates indoor light

A new electronic device developed by Minneapolis-Honeywell automatically regulates indoor lighting in much the same way a thermostat governs heat. That is, the brain of the unit (a special photoelectric tube usually mounted outside the building) measures incoming daylight and transmits its findings to an indoor control panel; there a dimmer turns off, or on, enough electric light to maintain proper illumination in work areas. Designed for schools, office buildings and factories, the complete package (the *Light Saver*) is reported to reduce electric power consumption as much as 80 per cent. It sells for $600, may be used with either flourescent or incandescent lighting, and is capable of controlling an interior zone of approximately 4,000 square feet. The *Light Saver* system also permits the lighting to be operated manually.



Manufacturer: Minneapolis Honeywell Regulator Co., 2753-4 Ave. S, Minneapolis, Minn.

PLASTIC COATED PIPE prevents underground corrosion

To check the corrosive elements that attack the external surface of buried steel pipe, Republic Steel's *X-Tru-Coat* is factory-coated with a 0.3 inch polyethylene skin. Ready to use when it leaves the mill, *X-Tru-Coat* is available in diameters ranging from ¾ inch (cost: $6.80 per 100 feet) to 4½ inches ($22 per 100 feet). Though standard pipe units protected with

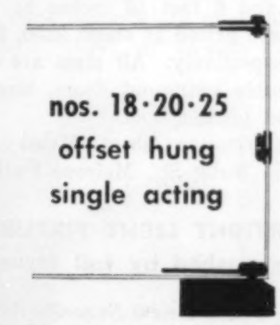
continued on page 138

for the MODERN ENTRANCE

RIXSON

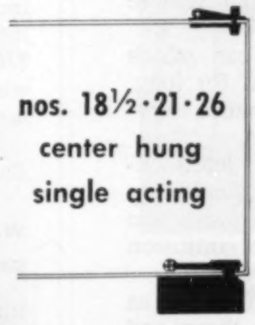
concealed floor type door closers

4 basic styles in a variety of sizes and types to meet every installation requirement



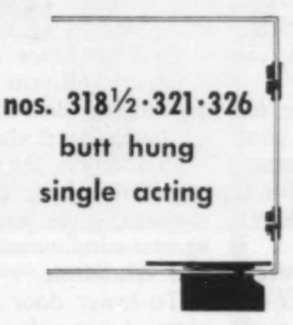
nos. 18·20·25
offset hung
single acting

Allow full unobstructed door opening space and wide door swing to 180°. Has arm locking device for vertical adjustment of door.



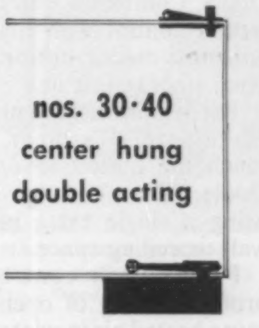
nos. 18½·21·26
center hung
single acting

Hanging hardware completely concealed. Ideal for batteries of doors. Require no mullions allowing greatest open entrance area.



nos. 318½·321·326
butt hung
single acting

For installations where it is desirable to have door hung independently from closer. RIXSON ball hinges with vertical adjustment recommended.



nos. 30·40
center hung
double acting

For doors that swing both in and out. Each swing separately adjustable to local wind and draft conditions. Completely concealed.

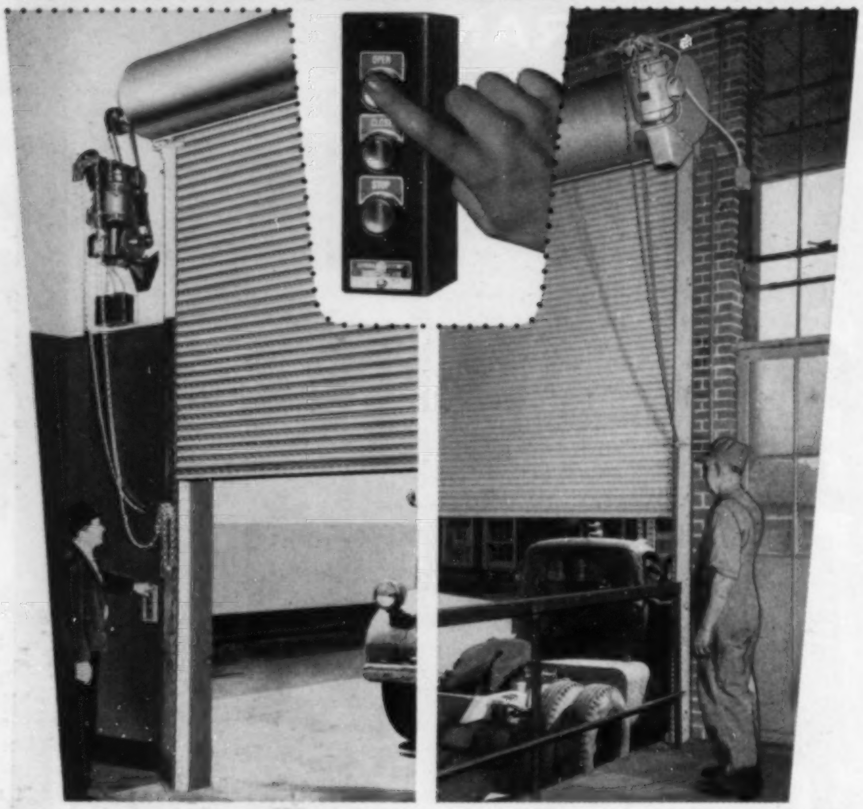
write for complete information and templates

THE OSCAR C. RIXSON COMPANY / *originators of the checking floor hinge*

9100 w. belmont ave. · franklin park, ill.

CANADIAN PLANT: 43 racine road • rexdale, ontario

For Better CONTROL of Costs



Kinnear Motor-Operated Steel Rolling Doors

A proved way to "put the finger" on unnecessary costs is to install Kinnear Motor Operated Rolling Doors. Combining quick, easy push-button control with highly efficient *coiling upward action,* they save time, steps, effort and space.

For example, you never have to make sure all's clear before you touch the button to *open* Kinnear Doors. They coil upward without using a single extra inch of floor, wall or ceiling space.

Push-button control promotes prompt closing of opened doors — saves heated air in winter and cooled air in summer.

You save floor, wall, and ceiling space — all fully usable for storage or equipment at all times.

You avoid traffic bottlenecks. You can control any number of doors from *one* point, or *each* door from any number of additional remote locations.

And no other doors can match Kinnear's 60-year record for long, dependable, low-maintenance service under hard, daily use.

In addition, the famous interlocking steel-slat curtain *(originated by Kinnear)* gives you extra protection against wind, weather, fire, intrusion and vandalism.

To lower door costs (as well as costs *due to doors*) in these and other ways, get the full story on Kinnear Rolling Doors. Built to fit any opening, in new or old buildings. Write today.

The KINNEAR Manufacturing Company

KINNEAR
ROLLING DOORS
Saving Ways in Doorways

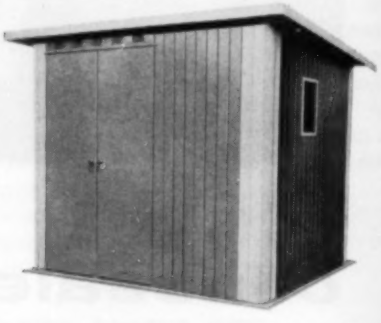
FACTORIES:
1640-60 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities

conventional wrappings cost slightly less, *X-Tru-Coat's* plastic armor weighs about one-eighth that of conventional wrappings, thereby allowing easier handling. A special "live" (nondrying) adhesive undercoating used to seal on the extruded polyethylene also contributes to the new pipe's field success. Since this adhesive never sets up, or becomes brittle, flexing the pipe will not break the bond. In addition, the adhesive never loses its ability to self-seal cuts or abrasions, and it prevents underfilm moisture seepage at the ends of the plastic coating. (The coating is cut back from pipe-section ends to permit jointing.)

Manufacturer: Pipe Div., Republic Steel Corp., 3100 E. 45th St., Cleveland, Ohio.

STEEL UTILITY SHELTER
packaged for speedy site assembly

In about four hours a contractor can assemble this all-steel (25 gauge) *Handy House,* a new prefabricated utility shelter suitable for a variety of construction site uses: job office, tool crib, pump house, fire equipment station, etc. All components are precut and predrilled. Ribbed panels with a green or unpainted baked enamel finish are simply interlocked and bolted.

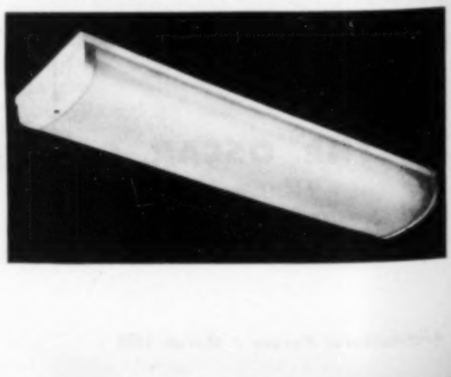


Three available sizes, 5 feet 6 inches by 5 feet 6 inches, 5 feet 6 inches by 8 feet 2 inches, and 6 feet 10 inches by 8 feet 2 inches, are priced at about $250, $320, and $360, respectively. All sizes are equipped with double swing-out doors, hinged window, and pitched roof.

Manufacturer: Sheet Metal Products Co., 2055 Ruby St., Melrose Park, Ill.

WATERTIGHT LIGHT FIXTURE
can be washed by full force hosing

Ruby Lighting's new *Security* fixture, the trim plexiglass unit pictured here, is said to be almost unbreakable, completely dust- and bugproof, and so watertight that it can be cleaned with a hose at full pres-

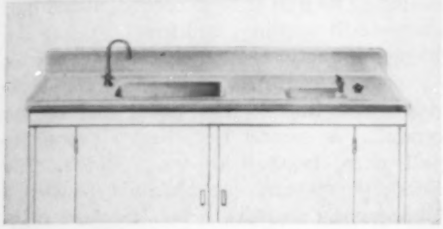


sure; all welcome features, especially for institutional kitchens, infirmaries, gymnasiums, lavatories, shower rooms, or swimming pools. Four feet long, the fixture has no dirt-collecting ridges or crevices and can be opened only with a special Phillips screw driver. *Security* fixtures hold two fluorescent lamps, fit flush against ceiling or wall, and sell for $123.75.

Manufacturer: Ruby Lighting Corp., 802 West Whittier Blvd., Whittier, Calif.

GLASS-FIBER SINK
has smooth, crackfree surface

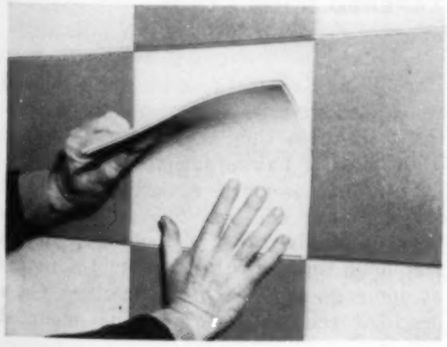
This complete sink and fountain deck-top is molded in one piece of lightweight glass fiber. It has no rim, no cracks, no joints to harbor dirt or sludge; it is available in a variety of colors (white, blue, yellow, gray, coral, and pistachio) and sells for $156.33, including fixtures. Length: 6 feet. Shipping weight: 50 pounds.



Manufacturer: Haws Drinking Faucet Co., Fourth and Page Sts., Berkeley 10, Calif.

SPONGEY WALL COVERINGS
act as insulation and soundproofing

A colored, lightweight foam plastic with a plain or striated surface is being introduced as a decorative wall covering material that provides both thermal and acoustical insulation. Developed by Curtiss-Wright and trade-marked *Curon,* this new ¼-inch thick material is available in 10-inch-square "tiles" or 24-inch-wide rolls and is applied with a cellulose wallpaper paste. *Curon*-covered walls or ceilings can be vacuum cleaned, or scrubbed with a mild soap and water solution. They are said to be rot- and mildew-proof, and nonfading. In addition, soiled or torn tiles can be easily removed and economically replaced. (Material cost: about 25 cents a



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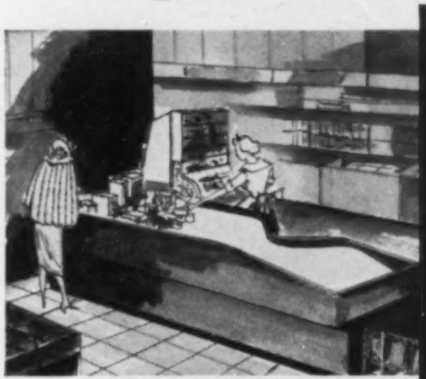
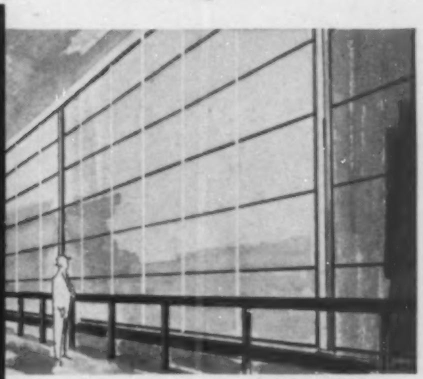
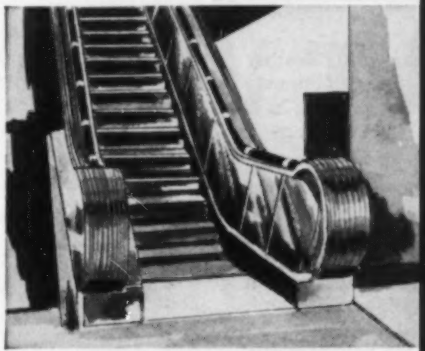
When wear creates problems...
MET-L-WOOD®
puts beauty to stay!



COUNTERS of Met-L-Wood can be designed to fit any decorating scheme, yet stand hardest service.

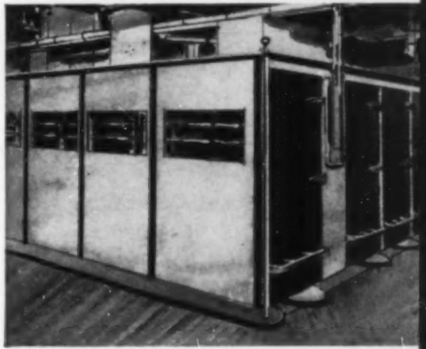


CURTAIN WALLS made of Met-L-Wood panels permit *fast* construction; lend beauty and life to buildings.

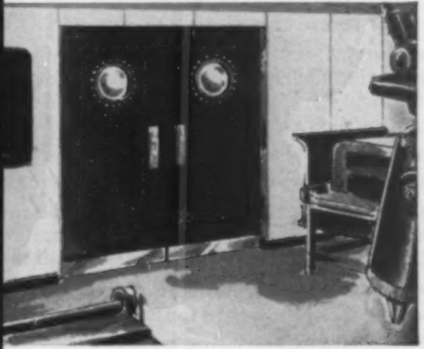


MOTOR STAIRWAY and WALKWAY PANELS of Met-L-Wood stand up under constant use... help damp vibration, resist denting.

WAINSCOTING in traffic areas gets rough treatment; is a natural for decorative Met-L-Wood use: sustained beauty without upkeep.



CABINETS and enclosures of all kinds gain strength, beauty, life from Met-L-Wood.



X-RAY & RADIATION ROOMS can be attractive as well as safe with lead-cored Met-L-Wood panels, doors.

Detailed data on how Met-L-Wood can serve you, in one or more of its many forms, is yours for the asking. Write for new Bulletin 522.
Met-L-Wood Corporation, 6755 West 65th Street,
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LIGHTWEIGHT
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NOW AVAILABLE IN SIX USEFUL COLORS FOR ROOFS AND SIDEWALLS

Robertson Color Galbestos has the greatest resistance to weather and corrosion of any protected steel roofing or siding obtainable anywhere. This position of broad superiority is made possible by a unique manufacturing process exclusive with H. H. Robertson Company.

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Long Service Life. Color Galbestos will give longer maintenance-free service under the most severe weather and man-made corrosive conditions. Even salt air cannot penetrate its tough coatings to destroy the steel core.

Not Fragile. Color Galbestos' strong steel core sheet guarantees against breakage—during shipment or during erection.

Resists Climatic Extremes. Color Galbestos is not subject to damage either by tropic or frigid temperatures. Its coatings will not run under broiling sun or crack or spall in sub-zero weather.

Goes Up Fast. The exclusive Robertson Top-Speed method of attaching Color Galbestos to structural steel speeds up erection for quicker occupancy.

Resists Flame. Leading testing laboratories have made exhaustive tests on the fire resistance of Galbestos and have published the results. Copies of these reports are available for study.

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a product of **H. H. Robertson Company**
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square foot.) The manufacturer also points to ease of application as another key advantage: flexible *Curon* can be simply pressed into or around corners, thereby eliminating need for careful cutting and fitting. The material's insulating properties are said to be comparable to equal thicknesses of rockwool or cork.

Manufacturer: Curtis-Wright Corp., 3 East 54th St., New York 22, N. Y.

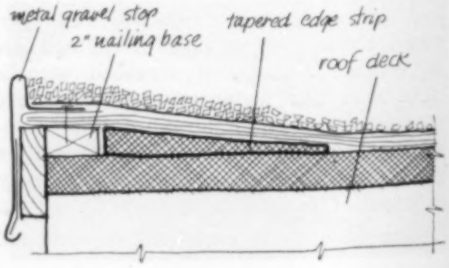
GAS OPERATED GUN
jet-propels line through conduit

An electrician armed with this new $94.50 pistol can shoot a light nylon line through 400 feet of straight conduit, or, where ells and bends make the going difficult, as far as 250 feet. The line (see photo) is tied to a sealed gas cartridge which is muzzle-loaded. The gun is then cocked, aimed into the conduit opening, and fired. Pulling the trigger punctures the cartridge, releases its compressed gas, and jet-speeds cartridge and line to the other end of the conduit. A second line, heavy enough to pull wire, is then drawn through. The total operation offers a simple, time- and labor-saving substitute for standard snaking or fishing techniques. Price includes gun, 40 cartridges, five cans of line (1,500 feet to a can), plus several special adapters for problem conduits.

Manufacturer: Jet Line Gun Co., 730 Seigle St., Charlotte, N. C.

TAPERED ROOF STRIP
carries felts over nailing base

For 15 cents a lineal foot Insulite's tapered wood-fiber strips take the bend out of roofing felts when they cross over a nominal 2 inch wood nailing member (most frequently used as a base for attaching gravel stops to the edge of flat or low-profile decks). Ready-made, a foot wide and 4 feet long, the strips taper from 1⅝ inches at one edge to ⅛ inch at the other. On a dead-flat roof they may be edge-mounted



to minimize dripping or to channel water toward utility drains.

Manufacturer: Insulite Div., Minnesota & Ontario Paper Co., 500 Investors Bldg., Minneapolis 2, Minn.

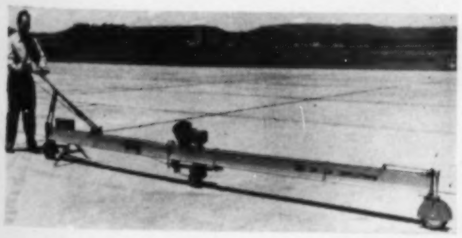
DRY-WALL ADHESIVE
reduces impact sound and nail popping

The *Sheetrock* adhesive technique for dry-wall construction is quick and simple. First, a narrow ribbon of *Sheetrock* sealant (a slow-drying, rubber-resin mastic) is gunned onto the face of framing members (see photo). Then, the plasterboard panels are positioned and nailed, 16 inches on center. The sealant spreads across the stud facing, bridges minor surface irregularities, and creates a firm bond at all contact points. The result: impact sound, the hollow drum-tone common to plasterboard walls, is appreciably dulled; nail popping is virtually eliminated; and about half as many nails (and half the nailing time) are required as in standard nail-on methods. Priced at $10, a 5 gallon can of *Sheetrock* adhesive will handle roughly 2,000 square feet of wallboard.

Manufacturer: Miracle Adhesives Corp., 214 E. 53 St., Bellmore, L. I., N.Y.

ROLLING STRAIGHT-EDGE
dye-marks pavement irregularities

The new *Hi-Lo Detector*, a 10 to 16 foot-long rubber-tired, aluminum level that is rolled across concrete or asphalt slabs, makes it possibe to locate and mark surface irregularities quickly and accurately. A center wheel measures all up and down variations. These variations are magnified 20 times on a large center-mounted scale and a dye-marker, controlled by the operator, stains uneven sections so that they may be ground down to meet job specifications. Prices for the complete apparatus range from $486 to $797. A special buzzer attachment that indicates high and low areas is also available at a slight, additional cost.



Manufacturer: Soiltest Inc., 4711 W. North Ave., Chicago 39, Ill. END

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for light

for telephone

NEW TWINDUCT

a dual service raceway under a single cover

Now National Electric has developed Twinduct, a new, large capacity raceway system for power, light and telephone . . . under a single cover.

Ideal for wiring or rewiring office buildings, apartments or other commercial structures, Twinduct can be installed flush with the wall or on the surface. High and low potential services are easily accessible by simply removing a common cover.

An all-metal surface raceway, Twinduct has ½" and ¾" knockouts and mounting holes along the base. It is approved by Underwriters' Laboratories Inc. for high potential wire fill up to 10 No. 6 AWG Type TW conductors. The low potential raceway accommodates 50 twisted pair telephone wires or several 26 pair cables. Covers are available for telephone jacks.

Write for complete information on the new National Electric Twinduct raceway system today.

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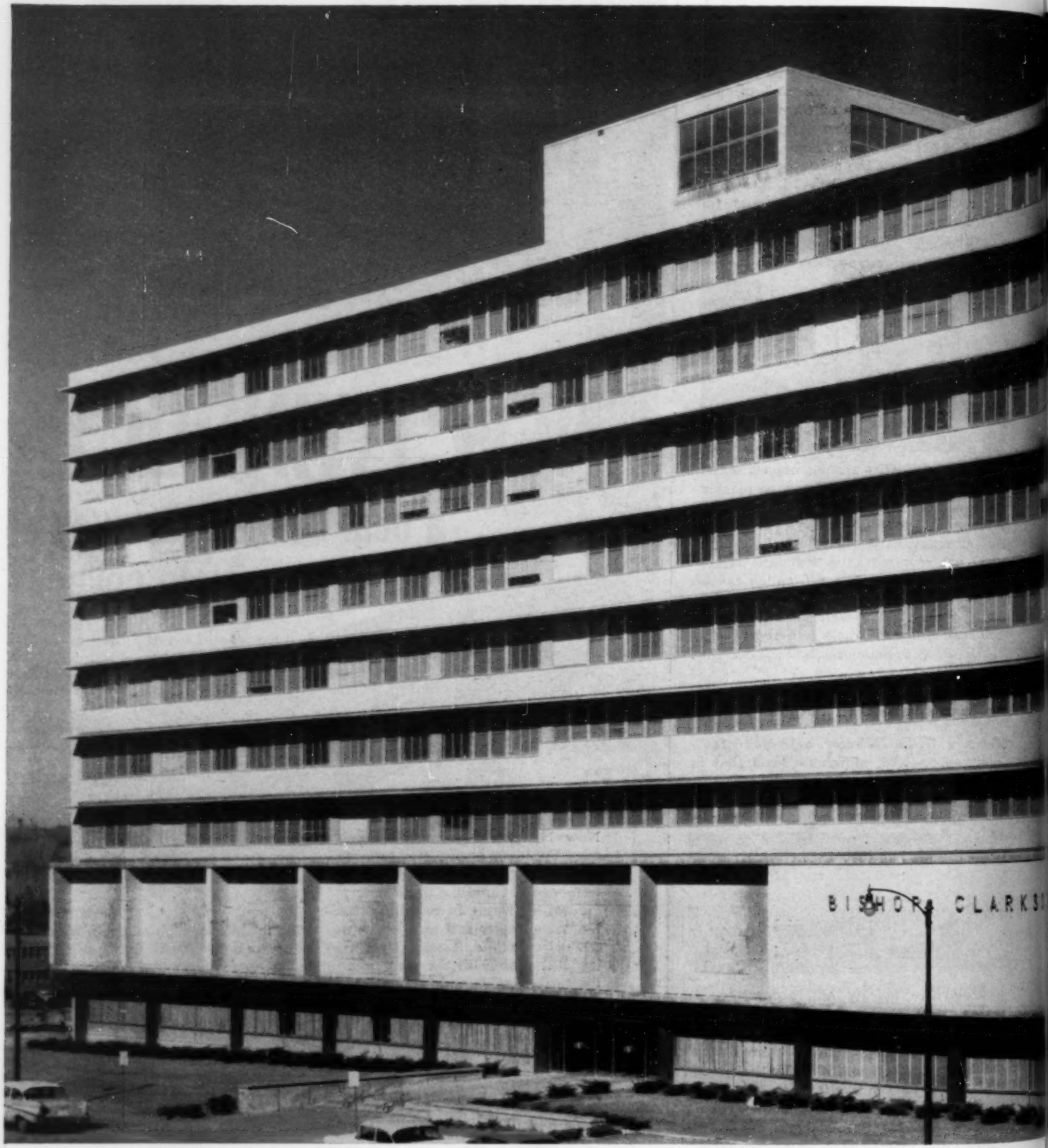
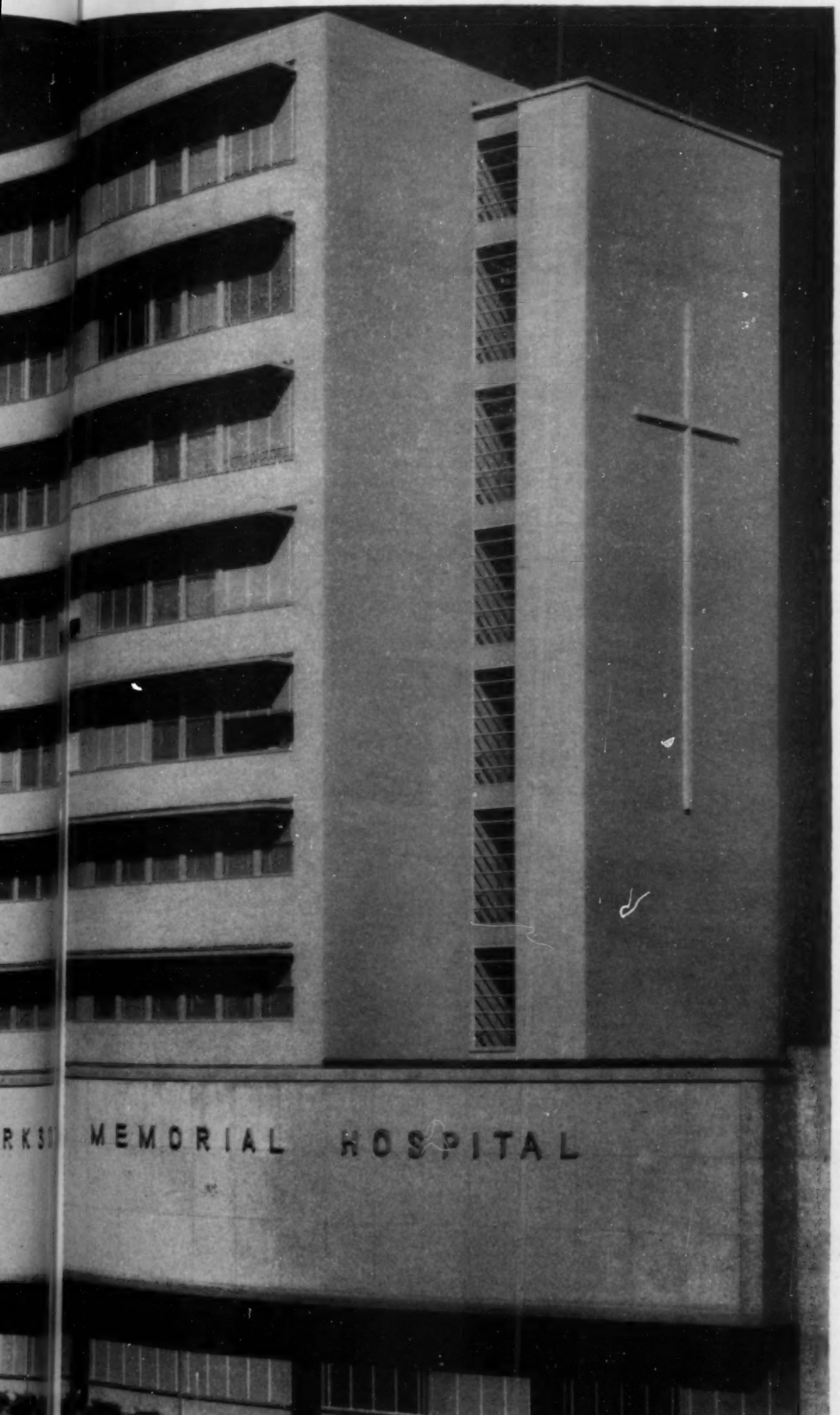

BISHOP CLARKS

Architect: Leo A. Daly, Co., Omaha, Nebraska

the architectural appeal

MEMORIAL HOSPITAL



The Bishop Clarkson Memorial Hospital at Omaha, Nebraska, is an excellent example of the part Pittsburgh Glass plays as a basic material in architectural plans.

In creating this impressive structure, Architect Leo A. Daly selected Pittsburgh Polished Plate Glass for the front of the building. At the back, many openings are equipped with Twindow®... the windowpane with insulation built in. Through its exceptional insulating properties, Twindow keeps interiors cooler in summer, warmer in winter. Patients and staff are thus placed in a more comfortable environment. And, through the use of this insulating glass, other collateral advantages accrue, such as less cold air drafts at windows, reduction of outside noises, elimination of the need for storm windows, and actual savings in heating and air-conditioning costs, as well as in the initial cost of the equipment.

Among the many other *Pittsburgh* products found in this beautifully designed hospital are Tubelite® Sliding Doors in the newborn nursery where the entire wall slides. Also, the coffee shop is equipped with a bay of glass, consisting of Pittco® Premier Metal Frames with Herculite® Tempered Plate Glass Doors. And two banks of Herculite Doors form the entrance to the hospital.

May we suggest that, in *your* designs, you give first consideration to *Pittsburgh Glass* . . . the *basic* architectural material?

PITTSBURGH GLASS

. . . the basic architectural material

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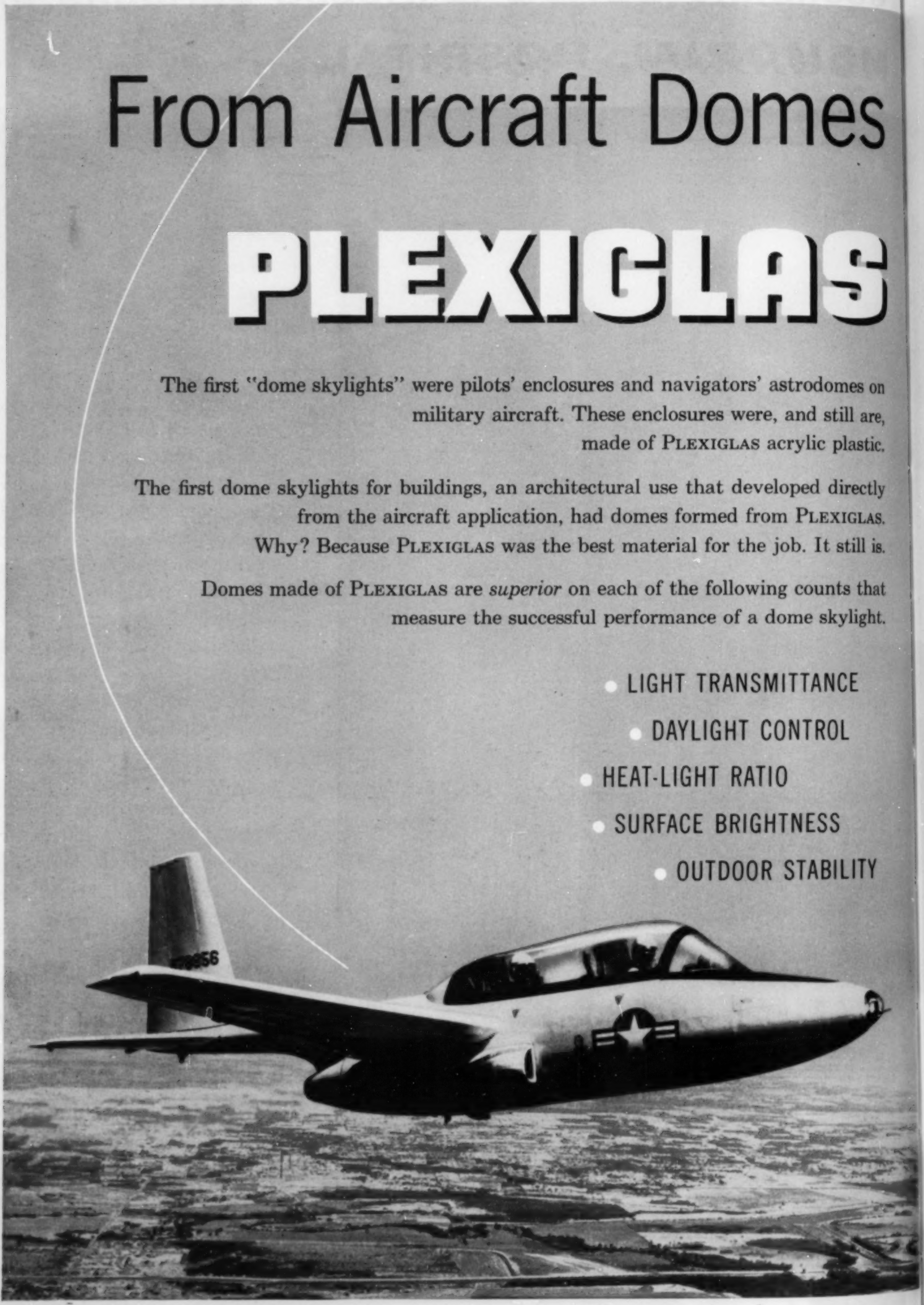

From Aircraft Domes

PLEXIGLAS

The first "dome skylights" were pilots' enclosures and navigators' astrodomes on military aircraft. These enclosures were, and still are, made of PLEXIGLAS acrylic plastic.

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We will be glad to go over the test results with you in detail, and to send you the names of PLEXIGLAS dome skylight manufacturers.

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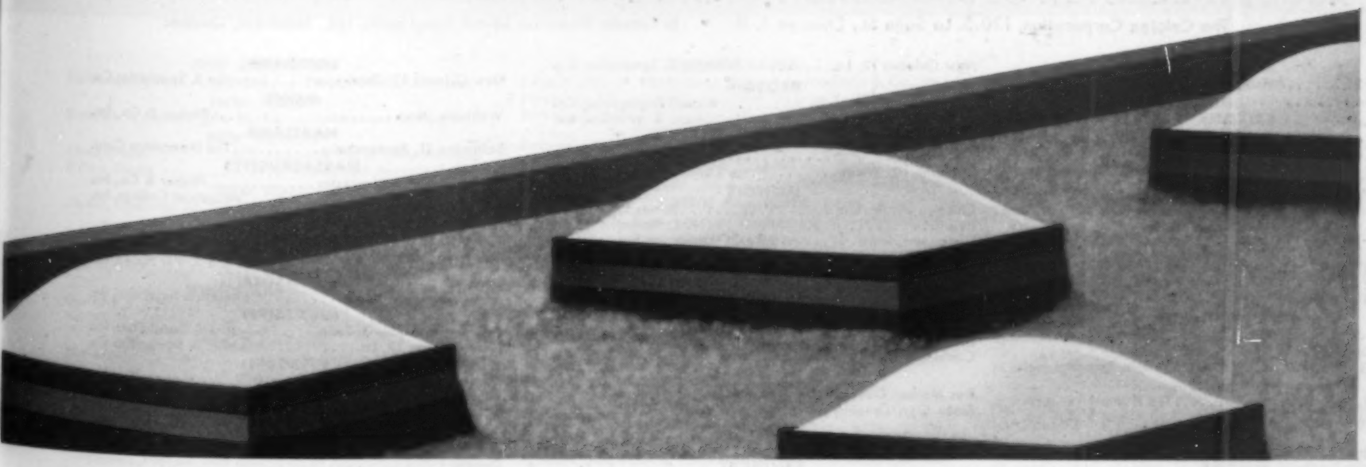

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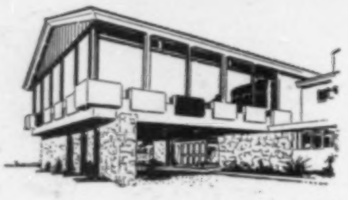
. . . for ceiling ideas unlimited



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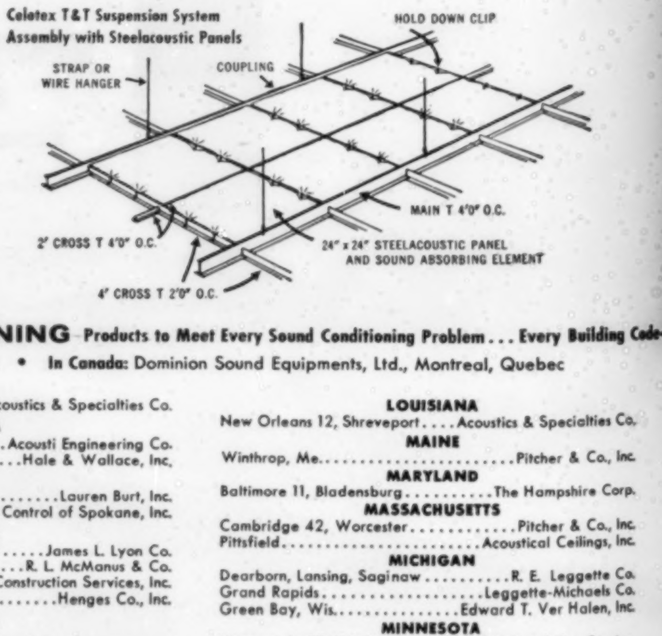
La Jolla Country Club, La Jolla, California, showing ceiling of Acousti-Celotex Stria-Colored Steelacoustic* Panels on a T & T* Suspension System. **Architects:** Paderewski, Mitchel and Dean, San Diego. **Acousti-Celotex Contractor:** Hackett Acoustics and Specialties, Inc., San Diego, Cal.

*TRADE MARK REG. U. S. PAT. OFF.



Celotex T&T Suspension System Assembly with Steelacoustic Panels

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. . . recreation . . . restoration . . . adventure

PLANNING FOR RECREATION. By Wayne R. Williams. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 297 pp. 8½" x 11½". Illus. $18.

Full of the pictorial delight and adventure that should mark any book on recreation, Wayne R. Williams' valuable contribution to the field also contains a number of provocative, occasionally downright disturbing essays. The essays were written by such diverse thinkers as John E. Burchard, dean of humanities and social studies at M.I.T. (whose "Broad Definition" makes an eloquent plea for a pulling together of our many recreational interests—e.g., set up art displays in public play areas), James J. Cox, staff head of the Pasadena Welfare Council (who answers the architecturally interesting question of where recreation can occur with a well-informed "just about everywhere!"), and visual space expert Gyorgy Kepes.

Two statistics brought out during the course of the book make all this good talk seem even more worth-while. They are the carefully reasoned predictions that expenditures for recreation will continue to increase at a rate faster than that at which the national income is rising and that, in the course of the next 20-odd years, a large percentage of U.S. workers will spend only 28 or 30 hours per week on the job. A hugely important kind of environmental challenge is thus being created, and the masses are apparently ready to meet it as enlightened clients. The book wonders whether the professionals (including architects) are ready too.

WIDE WORLD PHOTO

Recreational needs are infinitely varied: from oldsters in San Francisco . . .

MICHAEL WOLGENSINGER, ZURICH

. . . to youngsters on a sculpture-adorned hillock in Switzerland.

Author Williams and his assembled essayists are to be commended for responding to the theme with imagination as well as with detailed common sense. Dr. Kepes, writing toward the close of the book, deserves a special kind of prize for his "big-picture" kind of thinking. A sample: "We have reviewed some of the avenues to true recreation which deserve exploration by the designer and the artist. But the greatest contribution the designer could make would be to train man or, in a sense, design man to be his own true designer, capable of designing his days, his activities, his repose."

CONTEMPORARY ARCHITECTURE AND CITY PLANNING IN WEST GERMANY. By Werner Hebebrand. Published by The Cooper Union for the Advancement of Science and Art, Cooper Square, New York 3, N.Y. 32 pp. 6" x 9". Illus.

The subtitle of this booklet might be "How to take advantage of a national calamity." Dr. Hebebrand presents a fascinating look at some of the theories behind Germany's highly successful postwar urban restoration. Perhaps he is a bit too sure of himself (e.g., his statement "The new laws controlling the utilization of ground will prevent the development of so-called megalopolis"). But, since this optimism is the quality that must clearly be credited as the major factor in Germany's reawakening, it is the most appropriate tone of voice for such a book.

ADVENTURE IN ARCHITECTURE. By Whitney Stoddard. Published by Longmans Green & Co., 55 Fifth Ave., New York, N.Y. 8½" x 11½". $8.50.

Erecting a major new building is such an absorbing and unique experience for all who participate in its creation that the possibility of an equally stimulating event having occurred previously seems incredible to them. Only when history takes over and the limestone begins to streak does reality set in and the realization come that this building is, after all, very much like its neighbor. Yet were it not for the creative illusion, the number of buildings that approach architectural greatness would shrink below subsistence level, and the profession would expire.

Adventure in Architecture is a detailed

continued on page 150

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account of what happened in the planning and building (now underway) of a new Benedictine monastery on the site of an outgrown complex of buildings at Collegeville, Minn., between 1953 and today. Marcel Breuer was chosen to be the architect (over an impressive list of 12 candidates, including Neutra, Gropius, Belluschi, and Saarinen), largely because of his attitude toward the project. His success in translating the desires of his monastic clients prompted Professor Stoddard of Williams College to chronicle the undertaking, decision by decision. And the fact that a similar series of meetings, ideas, and compromises will take place at some time in the future (or has taken place in the past) did not diminish Stoddard's enthusiasm in the slightest.

Author Stoddard has reported an architectural experience so faithfully that the illusion of its uniqueness survives, unshattered. This accomplishment is perhaps more praiseworthy than would have been a more scholarly attempt to relate the monastery to other historical structures.

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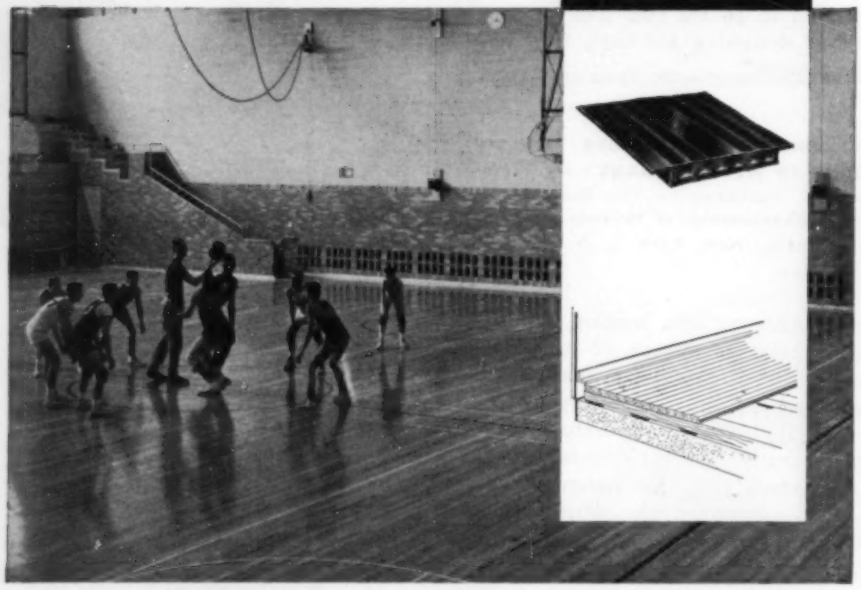

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PermaCushion floor systems offer other benefits, too: the natural beauty and durability of hard rock maple, dry, cross-ventilated subfloor and remarkable long-run economy. When planning a gymnasium or auditorium, consider the advantages of the PermaCushion free-floating floor system. For details, write Robbins Flooring Company, Reed City, Michigan. Attn: Dept. AF 358.

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TECHNICAL PUBLICATIONS

A selection of new handbooks, textbooks, technical reports, brochures and commercial leaflets, noteworthy for their information content or pictorial format or both

NATIONAL ELECTRIC CODE HANDBOOK. Ninth Edition. Published by McGraw-Hill, 327 West 41st St., New York 36, N.Y. 664 pp. Illus. $8.

Based on the 1956 edition of the National Electric Code, this newly published manual shows how to handle all types of wiring jobs in strict accordance with the Code and explains the Code's latest, revised rules. Contents cover wiring design and protection, wiring methods and materials, general equipment, public occupancies, special equipment and conditions, communications systems, and construction specifications. The 394 illustrations and 34 tables, documented by detailed, but understandable language, makes this a handy rule book for electrical engineers and contractors.

PROCEEDINGS: WORLD CONFERENCE ON PRESTRESSED CONCRETE. Published by the World Conference on Prestressed Concrete, Inc., Room 216, 417 Market St., San Francisco, Calif. 275 pp. Illus. $10.

This bound, phone-book-size volume contains the 38 papers presented at the 1957 World Conference on Prestressed Concrete. Sample of topics covered: bridges, lift slabs, pavements, wharves, piles, dams, precast prestressed beams. A fact-filled, picture-studded tome for an engineer's library.

PRODUCTS OF STAINLESS STEEL FOR ARCHITECTS AND BUILDERS. Published by the American Iron & Steel Institute, 150 East 42nd St., New York 17, N.Y. 45 pp. Illus. Free.

From exterior and interior curtain walls, windows, and doors to hardware, sinks, stoves, and swimming pools, this booklet spans the wide world of stainless steel products, extolling their beauty, low maintenance costs, and durability. Not highly technical, but the photos are good, the drawings are clear, and the reading is easy.

ELECTRIC HEATING AND COOLING FACT BOOK. Published by Electrical Information Publications, Inc, 2132 Fordem Ave., Madison 1, Wis. 36 pp. Illus. 50¢.

Designed as a guide for builders, architects, electrical contractors, heating and ventilating engineers, this new directory for 1958 contains over 100 listings of electrical heating equipment: wall units and panels, base boards, ceiling units, portables, built-in ducts, and floor units, heaters, thermostats, and heat pumps.

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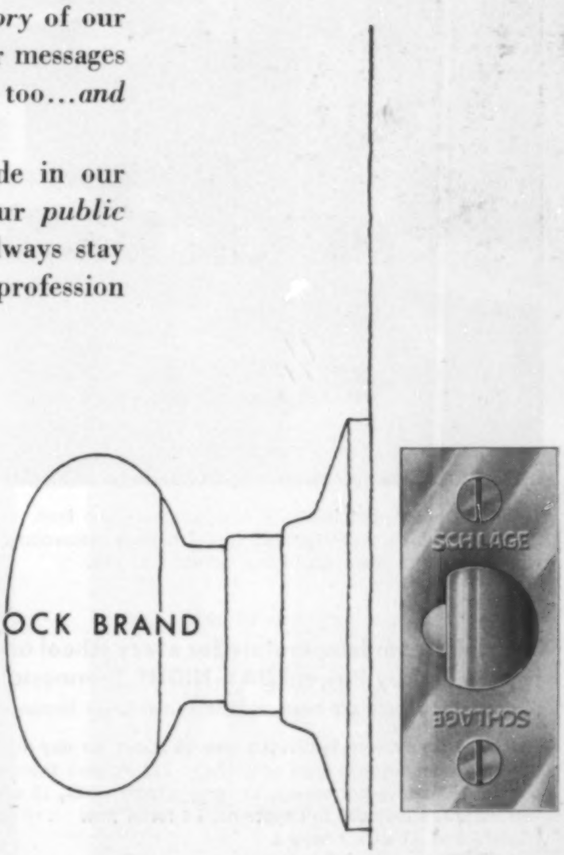

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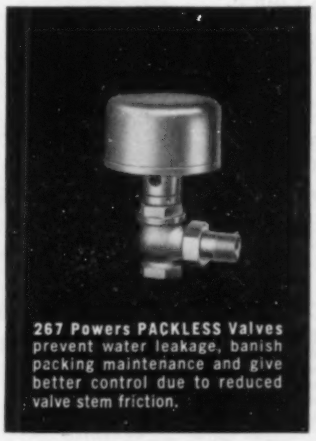

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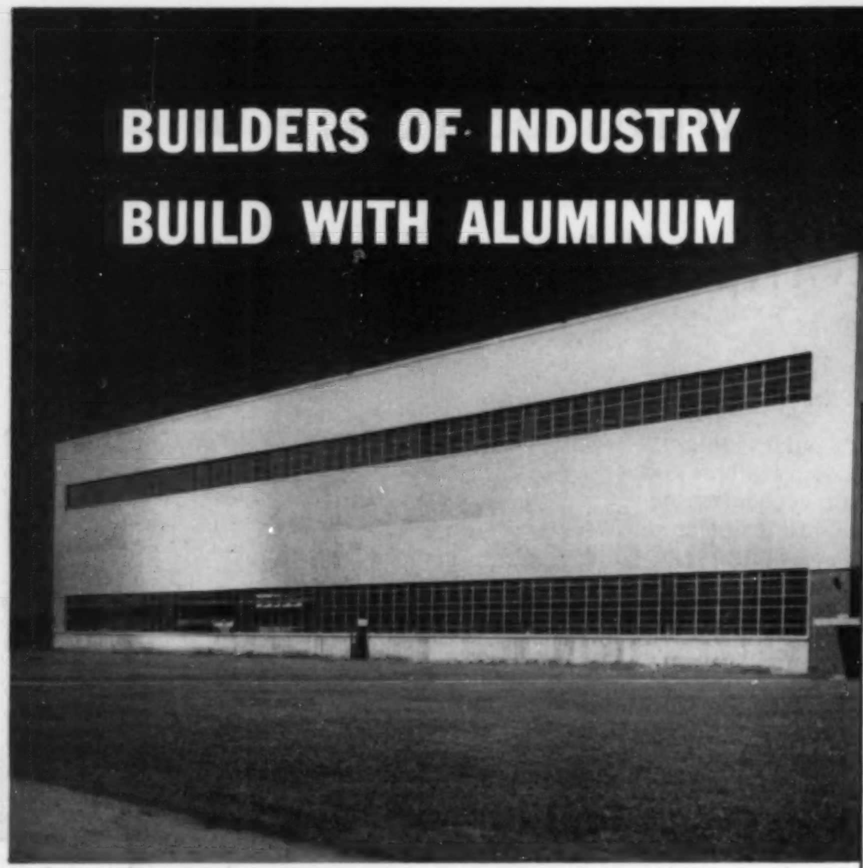

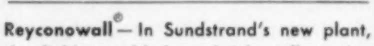

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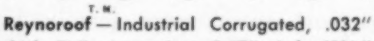

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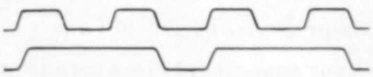

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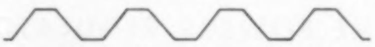

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Excerpts

What other people are saying

UNAMERICAN CITIES

AIA Executive Secretary Edmund R. Purves has been speaking out with remarkable candor recently. Invited to a recent forum of the Pennsylvania Society of Architects, he delivered himself of some particularly blunt words on the subject of government communities:

The new architectural client has arrived and is here to stay—he has no face, no body. He has substance without form; in time, he shall probably be identified, but for the moment I can think of him only as an amorphous something who offers little point of contact, but who nevertheless is the client. But sometimes I think he defies indentification.

Maybe I can explain what I mean by referring to the Atomic Energy Commission. I have been to a number of its installations, which are in themselves communities of 30, 40, 50 thousand people with all that a community should have in the way of housing, hospitals, schools, entertainment, shops, and all the facilities. Now these are not communities which have grown naturally of themselves. Nor are they Army Posts created by an experienced service. They are produced and operated by contract. The U.S. Government contracts General Electric or Union Carbide or some organization of that size to create, produce, manage, and direct a community which not so long ago would have been regarded in this country as a sizable city.

This is indeed something different for us to reconcile to our American way of life. It is a form of communism or socialism or abnegation which is terrifying in its potentiality. Take for instance Banford in the State of Washington—a community of 50 or 60 thousand people. The houses, streets, shops, theaters, churches, hospitals, police and fire departments, schools, the way of life have been contracted for by the government to be produced by General Electric, and General Electric does so. It does an able job, but one which does not find its roots in the philosophies which founded this country. Town hall meetings, PTA meetings, for instance, are but a mockery. Decisions normally made and reached by the town fathers are made by a board of directors of General Electric, or more likely a subcommittee of the board, far removed from the scene, impersonal and awful in its superobjectivity, or rather in its concern for the General Electric stockholders.

Now American citizens live in these communities — more and more of them every day—and are learning to lean back and accept assistance and direction of their lives, of their mores, and of their surroundings. This is something vastly different from the forces which produced the great communities in the artistic periods of the past.

CONFLICT

Winston Elting in the Inland Architect:

The conflict of ideas in present-day architecture is restricted to serious as opposed to popular architecture, to architecture as a creative art as opposed to a business, an art-science rather than a comfort-commodity.

This conflict is familiarly historical: the romantic versus the classic, nature versus man, the emotional versus the rational; many faces, many terms. It has been going on a long time and the pendulum keeps swinging. Architects jump on and off, some fall on their faces, some land neatly and establish their little forts of conviction, some sail off into space and try to arrest the counterswing. Some, the safe and sane, stand as close to plumb center as possible and watch their colleagues sail by.

BEHIND TODAY'S WALLS

In the first issue of the Columbia University Forum, *Eugene Raskin, architectural critic and teacher, concludes that the modern wall is as much the result of psychology as of technology:*

In a primitive society, men pictured the world as large, fearsome, hostile, and beyond human control. Therefore they built heavy walls of huge boulders, behind which they could feel themselves to be in a delimited space that was controllable and safe; these heavy walls expressed man's fear of the outer world and his need to find protection, however illusory. It might be argued that the undeveloped technology of the period precluded the construction of more delicate walls. This of course is true. Still, it was not technology, but a fearful attitude toward the

continued on page 156

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world, which made people want to build walls in the first place.

We feel differently today. For one thing, we place greater reliance upon the control of human hostility, not so much by physical barriers, as by the conventions of law and social practice—as well as the availability of motorized police. We do not cherish privacy as much as our ancestors did. We are proud to have our women seen and admired, and the same goes for our homes. We do not seek solitude; in fact, if we find ourselves alone for once, we flick a switch and invite the whole world in through the television screen. Small wonder, then, that the heavy surrounding wall is obsolete, and we build, instead, membranes of thin sheet metal or glass.

It is not our advanced technology, but our changing conceptions of ourselves in relation to the world that determine how we shall build our walls. The glass wall expresses man's conviction that he can and does master nature and society. The "open plan" and the unobstructed view are consistent with his faith in the eventual solution of all problems through the expanding efforts of science. This is perhaps why it is the most "advanced" and "forward-looking" among us who live and work in glass houses. Even the fear of the cast stone has been analyzed out of us.

THE ENGINEERS CAN DO IT

In a speech before the Florida AIA Convention last winter, Edward Cohen of Ammann & Whitney told why U.S. engineers continue to be optimistic about the future.

To the methodical engineering mind, the best guide to the future is the extension of the curve of completed progress. The present is the beginning of the future. Our apprenticeship in steel and concrete has just been completed. We have only just begun to understand and appreciate their nature and use. New materials are becoming available. We may be approaching a time of fulfillment during which the knowledge we have achieved in building with our present materials will be reflected in structures of new beauty and purpose.

It is no longer necessary to hide an unpleasant framework behind a false façade. Rules of thumb and exorbitant factors of safety are being eliminated. The structural engineer has become the master of structures and the collaborator of the architect, rather than a merchant in beams and trusses. To the architect this means a new freedom from arbitrary limitations imposed by inadequate knowledge and technique. He can, working with the engineer, get structures which supply the esthetic, functional, and economic answers to his design problems. It places on the architect an additional burden of responsibility, the responsibility of imparting his intent and purpose to the engineer and working with him for its achievement.

In addition, collaboration of mechanical and electrical engineers, as well as lighting and acoustics specialists, is often needed to achieve the optimum success of a building project. We have reached a stage in the art where the "master builder" of old must in most cases be a synthesis of the planners, the artists, and the engineers.

Our challenge of the future depends on the architects' and the planners' concepts of society's requirements. The structural engineer can design higher skyscrapers and larger auditoriums for greater space, light, or freedom. He can also design space platforms and shelters. He can, if need be, design underground cities where life can continue, protected against threat of nuclear warfare. The engineer is the servant of society.

continued on page 158

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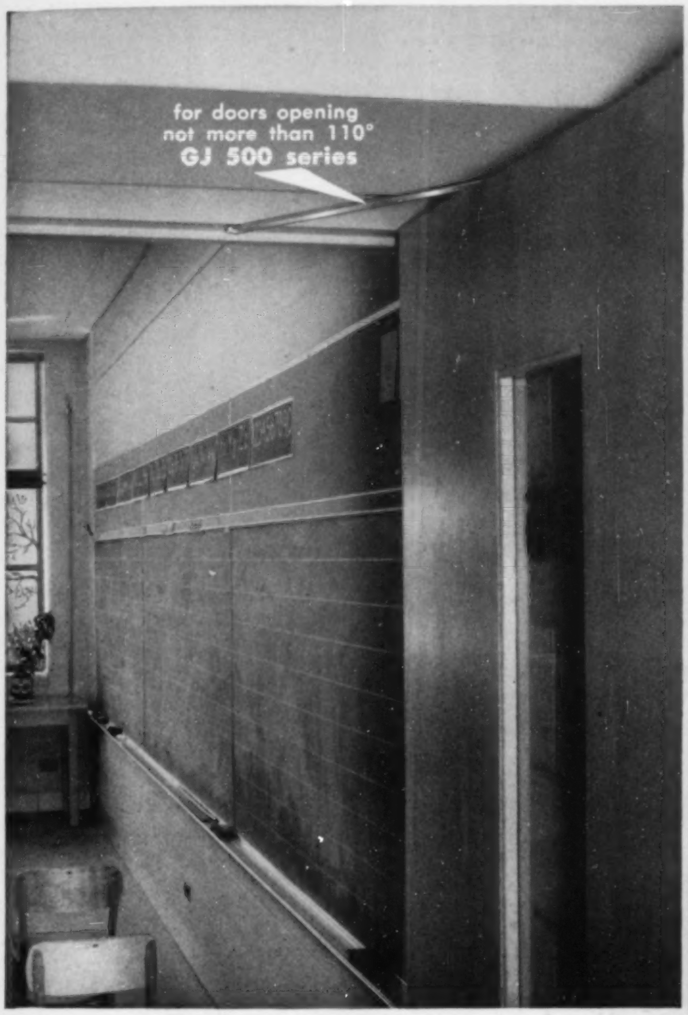

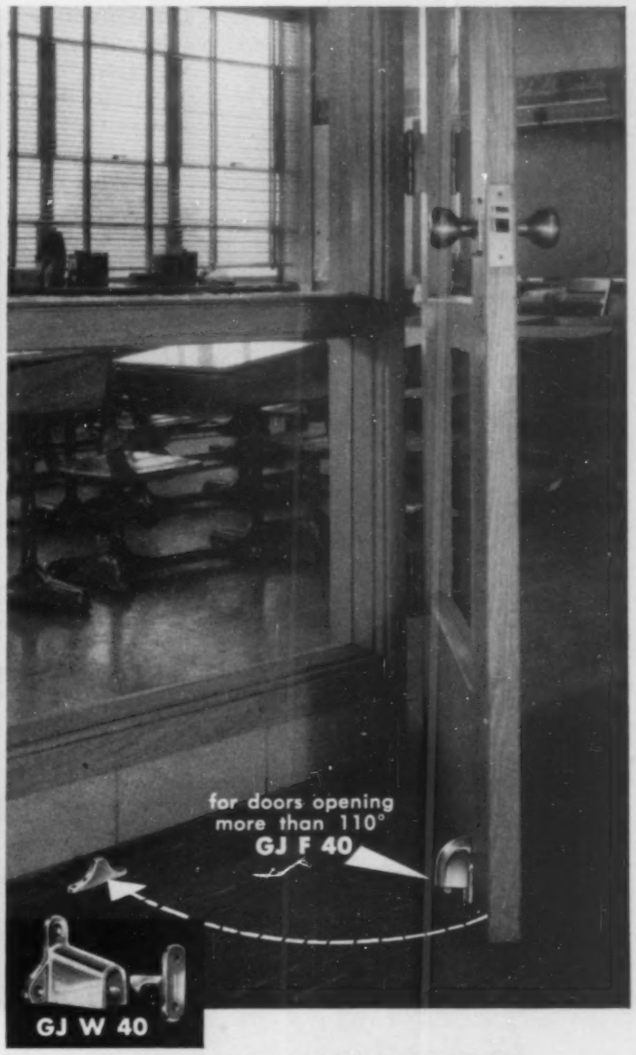

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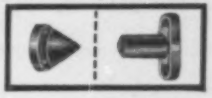

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Wellesley Senior High School Addition, Wellesley, Mass. Perry Shaw Hepburn & Dean, Boston, Mass. — architects

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THE SEA OF UGLINESS

Architectural ugliness will continue to engulf the few examples of good contemporary building unless architects accept the challenge of total environment. This is the theme of Ralph E. Rapson, head of the School of Architecture at the University of Minnesota, in an article written for Perspective, *magazine of the Students' Architectural Society of the University of Manitoba:*

An architect's work must be charged with something beyond maximum function and use, or the result will fail. He will not have realized total environment.

Often the utilitarian, structural, and economic aspects of a design have been successfully and brilliantly met and often the spiritual satisfaction rings true; however, all too often beauty is missing, the visual delight one receives from sensitive and loving handling of positive and negative space, the contrast of sun and shade, the enrichment of form and detail, and the play of color and texture. This failure to achieve architectural delight stems from numerous sources. In many instances it is due to the architect's own lack of imagination and his own deficient sensitivity. Lack of effort, complacency and defeatism, economic pressures and deadlines, while not to be condoned, play their part in our meager efforts.

If ever there was a need for careful and thoughtful design, it is now. Our times have produced far-reaching advantages in science and technology as well as highly significant social and political change. This is an age of mass production standardization, and rapid economic growth. It is a period of highly increased personal and group prosperity, yet all the while something is lacking.

In the headlong rush to conquer the unknown and to perfect scientific and industrial know-how, a world of unprecedented ugliness has grown up around us. All about us we see the sickening consequences of our great industrial and economic civilization. An angry environment full of discord and chaos confronts us at every turn.

Glaring lights, blaring noise, dust and dirt, distasteful advertising, speed and power, discordant lack of order and design, all assault our sensitivities and pollute the city and countryside alike — an environment seemingly dedicated to the mobile jukeboxes, miles of asphalt and concrete, and acre after acre of ranchburger delight. Much of this is the product or by-product of the machine, and there can be no denial of the great advantages and potentialities supplied by technology, but certainly the fault does not lie with the machine. Our environment and the products about us are of our own doing; it is for us to decide whether the machine is leader or servant. It is for us to build for pleasure and a full life rather than strangulation and slow death.

The know-how and the means have resulted in contemporary architecture, often fine, and occasionally exciting architecture. Today's building often reaches unprecedented heights in its solution of problems of shelter. The physical limitations and restrictions imposed by bygone period design have been all but rejected. Public and private buildings alike, large and small, have in many instances reached levels of accomplishment that honestly rate the designation, contemporary architecture.

Yet it is difficult to reconcile the topflight individual architectural accomplishment with the unbelievably low level of over-all environmental performance. For every bit of excellence there are countless examples of ugliness. The angry sea of un-design has all too often practically engulfed these examples because the architest cares not or dares not look beyond his immediate isolated effort. END

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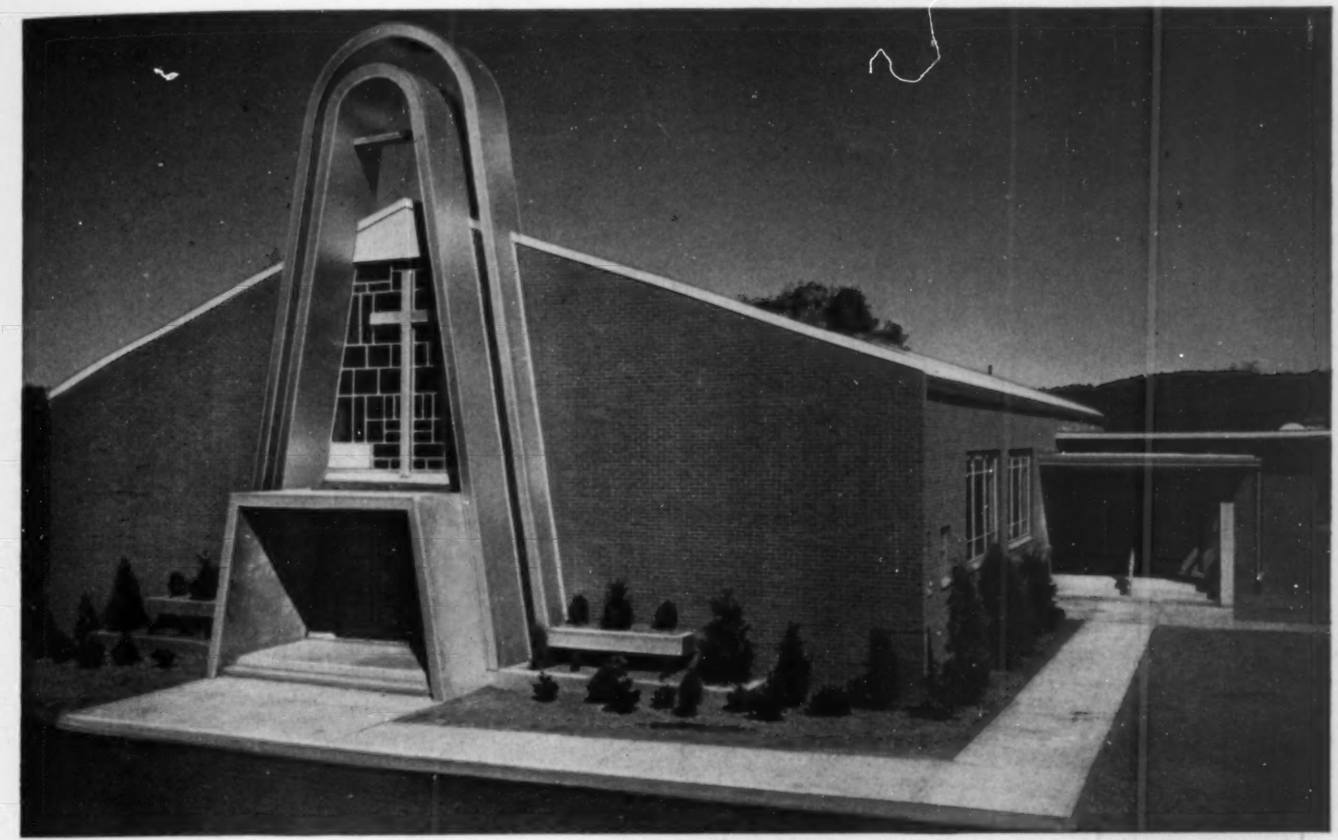
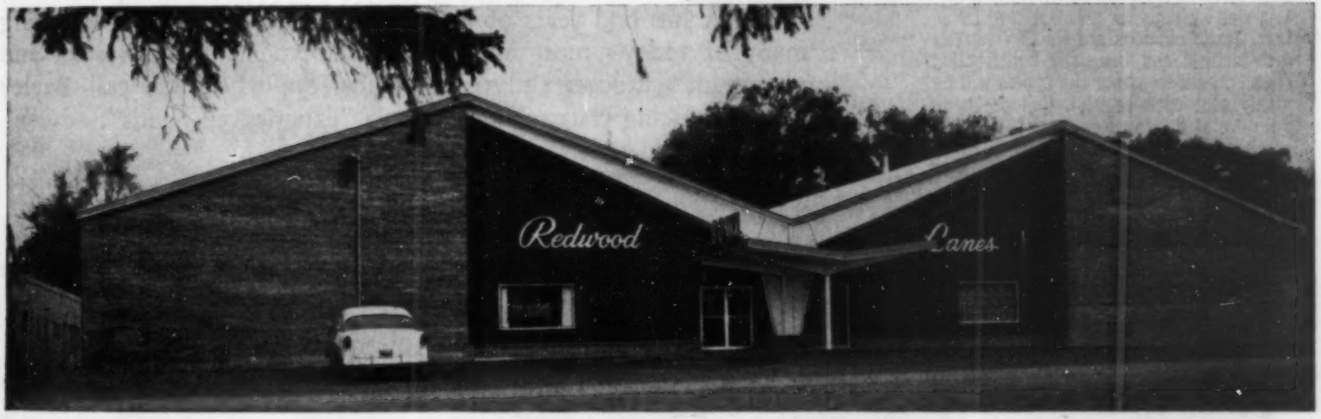


St. Catherine's social hall and gym, Blauvelt, New York



Redwood Lanes bowling alley, Latham, New York

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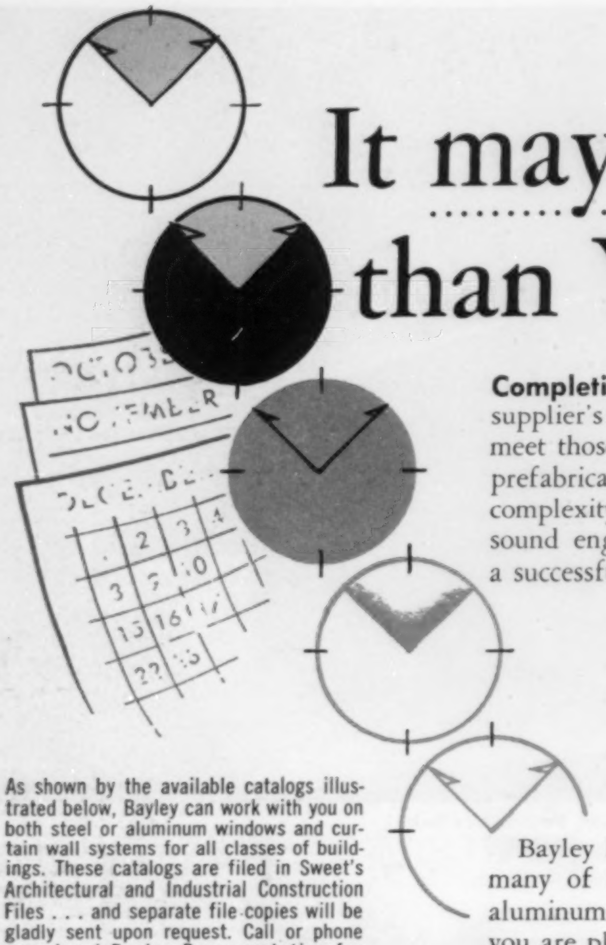
OCTOBER
NOVEMBER
DECEMBER
2
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23

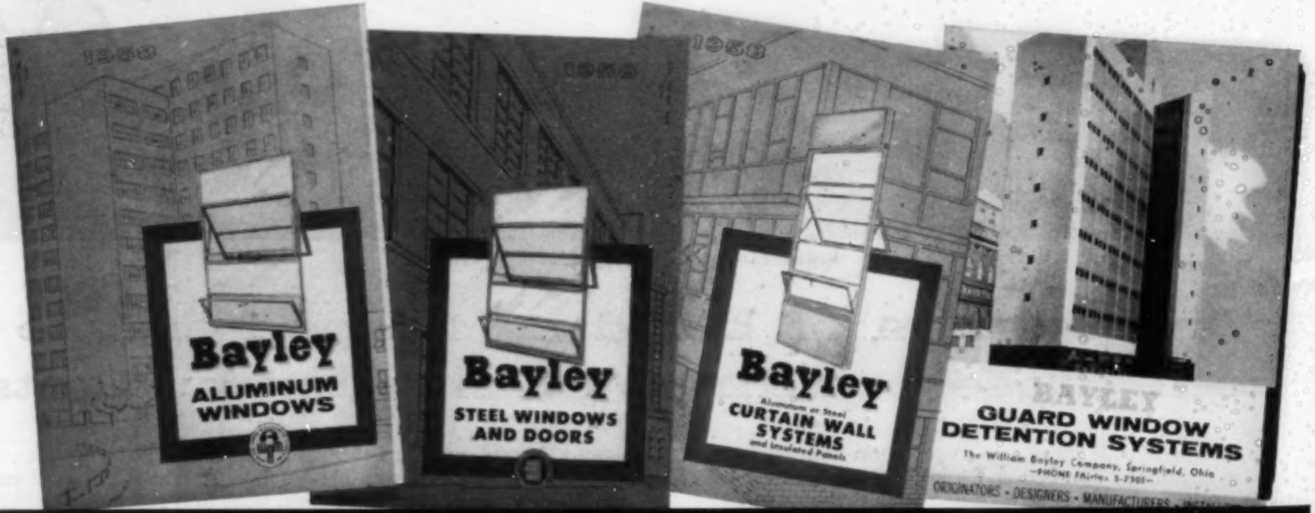
It may be LATER than You Realize!

Completion dates ARE vital. The earlier you can get your window supplier's counsel, the better service he can render in helping you meet those dates. This is more true today than ever! Windows and prefabricated curtain walls are of major importance and of increased complexity in today's buildings. Because of this, Bayley considers sound engineering service rendered to you—*early*—the essence of a successful contract.

- *It results in a sound wall.*
- *It allows individualized treatments.*
- *It saves designers' time.*
- *It eliminates re-work time.*
- *It effects increased economies.*
- *It permits earlier approvals.*

Bayley has had years of experience in originating and designing many of today's most important developments in both steel and aluminum windows and curtain-walls. So, when you call Bayley you are placing your requirements in "experienced hands".

As shown by the available catalogs illustrated below, Bayley can work with you on both steel or aluminum windows and curtain wall systems for all classes of buildings. These catalogs are filed in Sweet's Architectural and Industrial Construction Files . . . and separate file copies will be gladly sent upon request. Call or phone your local Bayley Representative for counsel. No obligation!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* PRE-FORMANCE:
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When you figure an incandescent lighting installation, you naturally want assurance that you'll get the on-the-job performance you need.

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Every Brascolite fixture, including the handsome square recessed unit shown above, has a brightness chart, coefficients of utilization and light curve, and other engineering information to help you.

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FOUND:

extra office space . . .

The building in the picture—owned by the International Union of Operating Engineers—is enclosed in porcelain-enameled steel curtain wall panels, highlighted with Stainless Steel mullions. The window frames are made from Stainless Steel, too.

The curtain wall is thin—so thin that the building designers picked up an extra 6.8% in floor area—compared to conventional wall construction that would be 8″ to 12″ thick at the minimum.

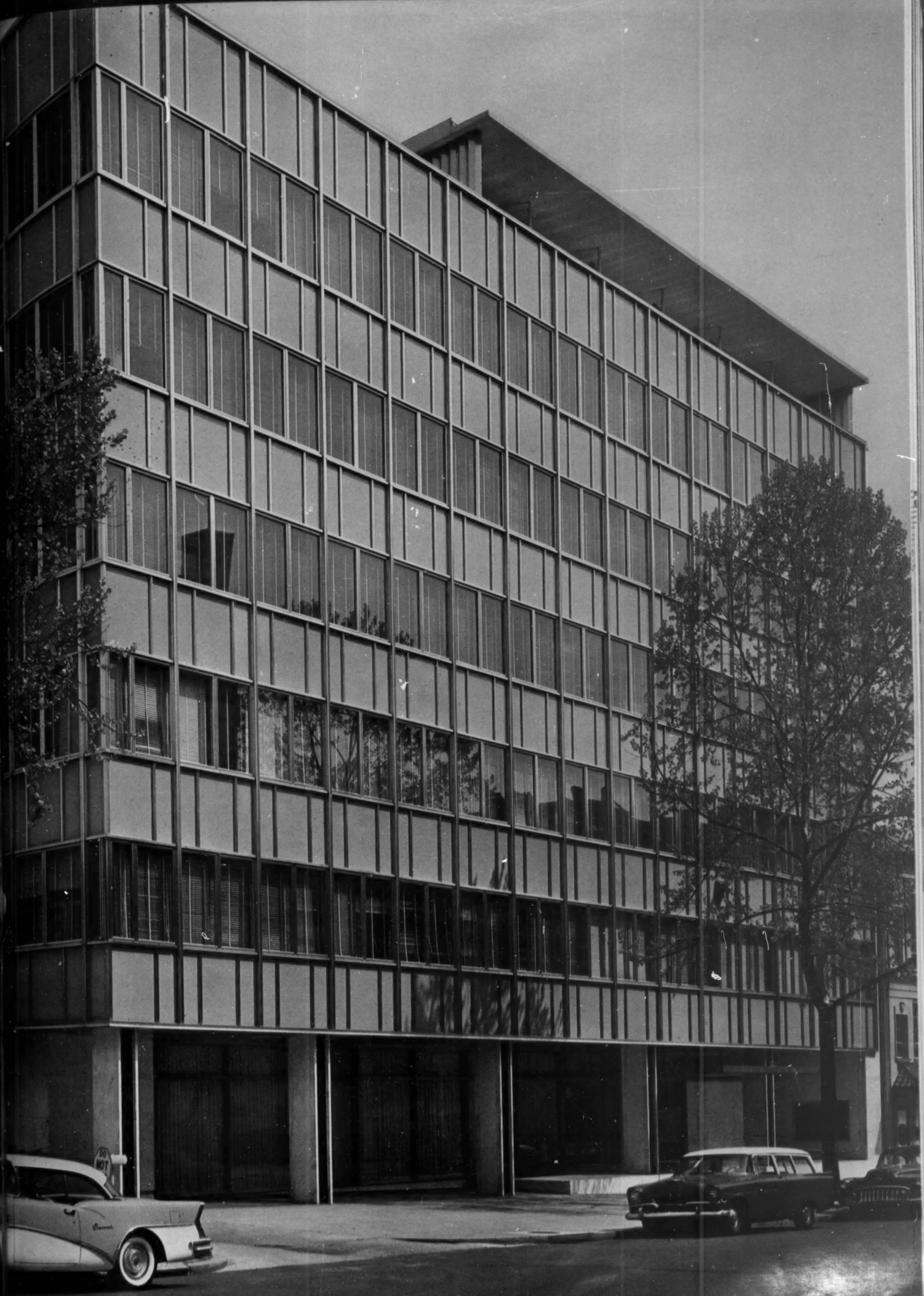
Steel curtain wall panels can be made in just about any color, any texture, any size or shape. The colors are permanent . . . made from high-temperature enameling frits that are time-tested for durability.

Steel curtain wall panels are light, but strong. Due to their lightness, they often reduce the building's structural requirements. They are strong enough to resist denting during erection—and they retain strength even at high temperatures, which is important in case of fire.

Curtain walls of steel cannot be equaled by any other building method for their combination of eye-stopping beauty, durability, low maintenance and low cost.

Credits: National Headquarters Building, International Union of Operating Engineers, Wash., D. C.; Architects: Holabird & Root & Burgee, Chicago; Panel Fabricator: Ingram-Richardson Mfg. Co., Beaver Falls, Pa.; General Contractor: George Hyman Construction Co., Wash., D. C.

USS **United States Steel**


DO NOT

29,000 square feet, with 2" x 32" x 96" W-100 INSULROCK building slabs of long, chemically treated fibers (pressure-bonded with portland cement) being applied. Bulb tee, laminated wood joist construction. Architect of Selma Armory, Evan Perry, Birmingham, Alabama; Contractor, J. M. Rush, Selma, Alabama.

Preferred performer everywhere– the strong, silent type

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School gyms. Convention halls. Factory workrooms. Restaurants. Business buildings. Armories, too, as pictured here.

Strong . . . The roof decking is INSULROCK, strong, tough, bound-to-last Insulrock slabs . . . resistant to weather wear and tear, insect damage, fungi growth . . . noncombustible, meeting National Board of Fire Underwriters requirements, listed by UL. Insulrock insulates. It goes on wood or steel framing fast, economically, any time, anywhere.

Silent . . . The ceiling is INSULROCK, the underside of the same Insulrock roof decking slabs. Insulrock makes a practical, profitable acoustical ceiling honeycombed with thousands of sound-silencing air pockets that trap, still, and kill up to 85% of ordinary ceiling-reflected noises. Insulrock ceilings help to simplify air-conditioning, too.

So you get strength. You get quiet.

And you get good looks . . . Permanent good looks, with Insulrock . . . random-textured, off-white, good looks, easy to clean, to paint, to keep painted, any modern color, to match or contrast with any surroundings.

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FLINTKOTE BUILDING MATERIALS

Division of The Flintkote Company

Selma Armory, Selma, Alabama. Clear span of 196 feet, showing how Insulrock roof decking furnishes *free* acoustical ceiling.

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When you make anything in metal for homes, kitchens and appliances, and you want enduring beauty and sales appeal in your product . . . design it, improve it and protect it with McLOUTH STAINLESS STEEL.

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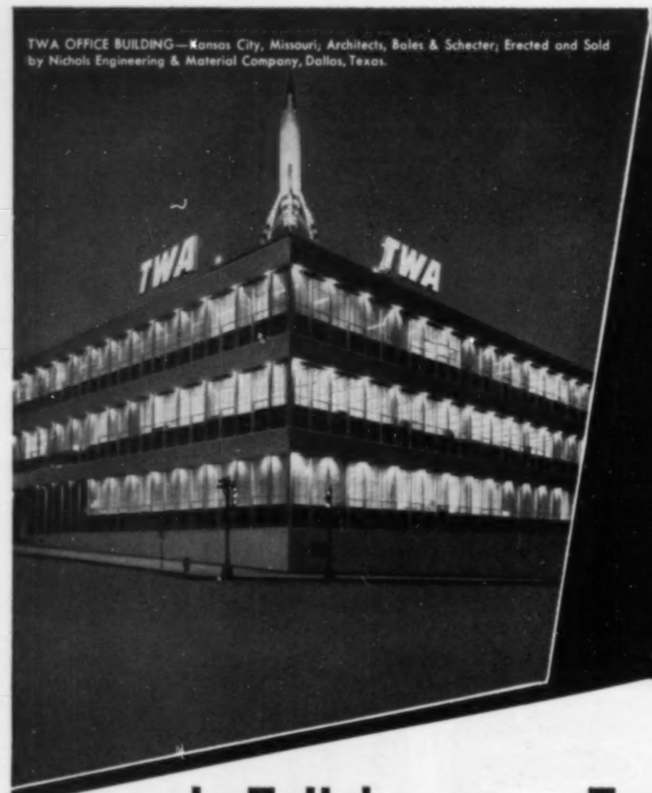
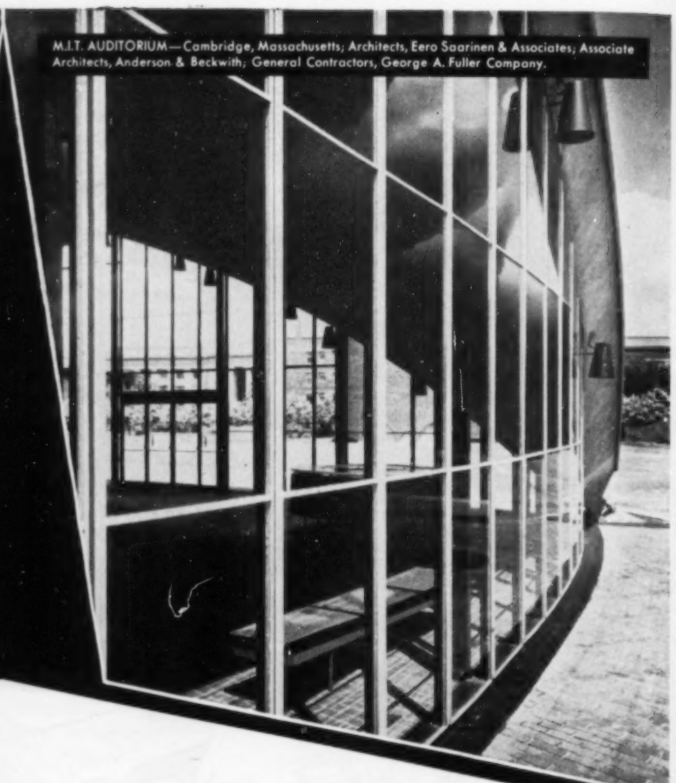
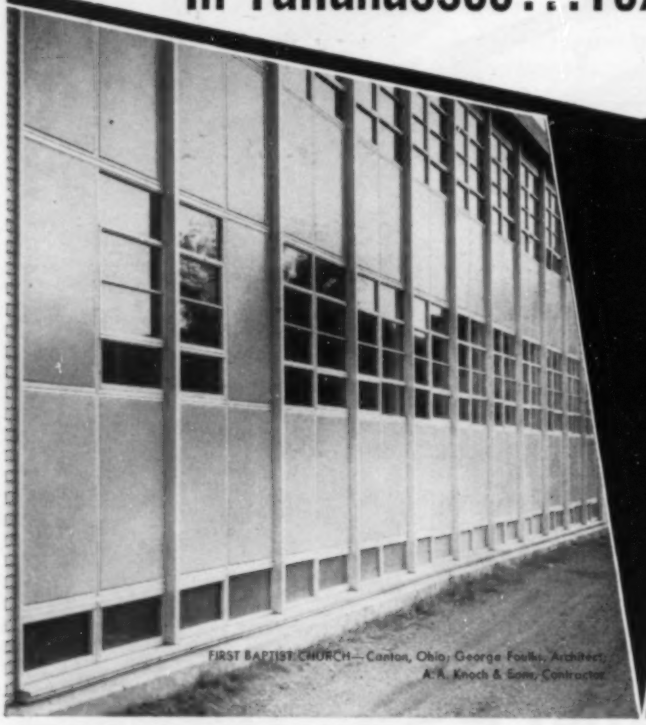


TWA OFFICE BUILDING—Kansas City, Missouri; Architects, Boles & Schecter; Erected and Sold by Nichols Engineering & Material Company, Dallas, Texas.

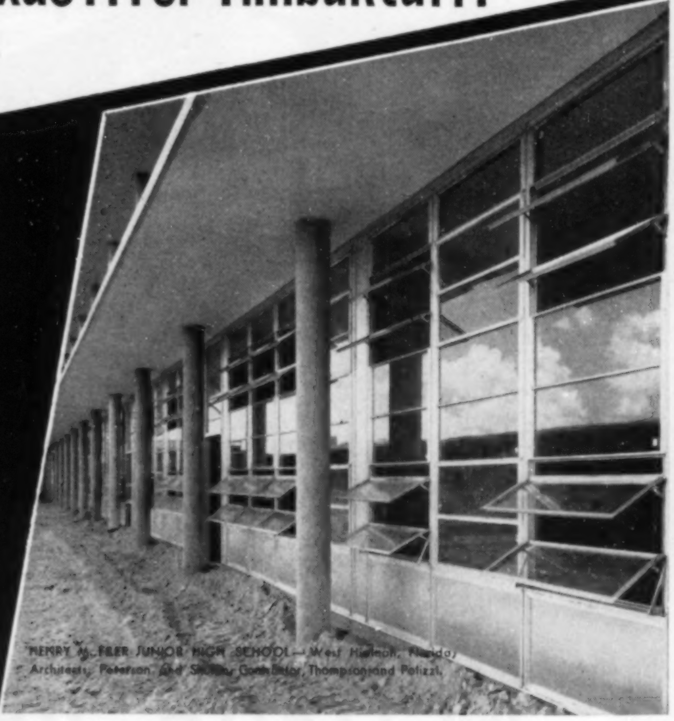


M.I.T. AUDITORIUM—Cambridge, Massachusetts; Architects, Eero Saarinen & Associates; Associate Architects, Anderson & Beckwith; General Contractors, George A. Fuller Company.

In Tallahassee . . . Texas . . . or Timbuktu . . .



FIRST BAPTIST CHURCH—Canton, Ohio; George Foulks, Architect; A. A. Knoch & Sons, Contractor.



HENRY H. FILER JUNIOR HIGH SCHOOL—West Hialeah, Florida; Architects, Peterson and Shuflin; Contractor, Thompsonand Polizzi.

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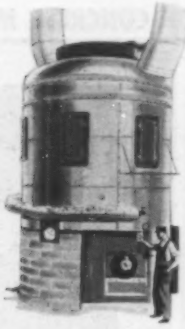
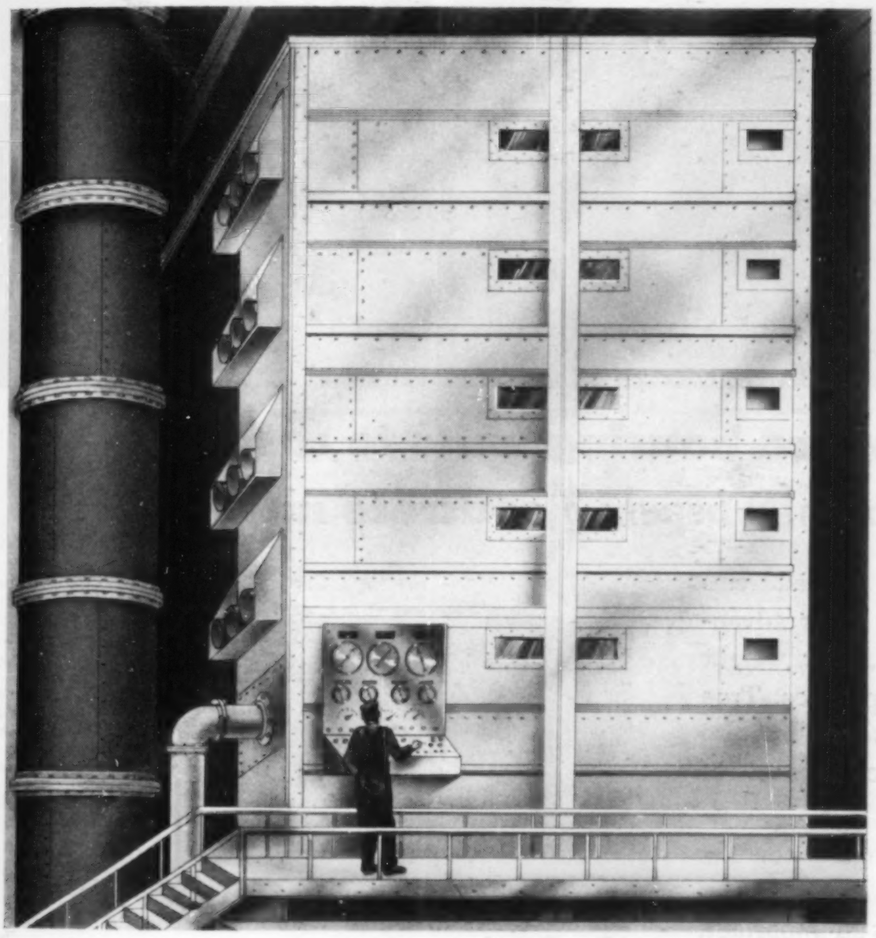
Until 1915. Over the centuries, building craftsmen used ovens to drive off water of hydration. Quality control was a matter of guesswork.



1915-1957. During the First World War, the kettle replaced the oven. Gypsum powder was produced by the batch process method. Cooling and re-heating made uniformity of product a problem.



THIS IS THERMO-FLO

the greatest advance in gypsum processing in 43 years

Thermo-Flo is an exclusive method of gypsum calcining . . . the first real advance in processing gypsum in over 40 years—and another Gold Bond *first* in the building materials industry.

To reduce gypsum rock to a usable powder form, it must be calcined ...the water "driven off." Conventionally, this is done by a batch process. Now, National Gypsum Company has perfected a more accurate, modern method of *continuous flow* processing. Only with Thermo-Flo can the speed and temperature in each stage of production be completely and accurately controlled. Thermo-Flo eliminates over-calcined and under-calcined gypsum.

Thermo-Flo means progress to us...but more important, it means a uniformly high quality product in each bag of plaster, each length of lath or sheathing used in your designs.

New Thermo-Flo is another example of Gold Bond's advanced research in building products and processes. Specify Gold Bond® for the finest gypsum available. National Gypsum Company, Buffalo 2, New York.

Gold Bond
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NATIONAL GYPSUM COMPANY

THE NEW BEAUTY OF CONCRETE MASONRY

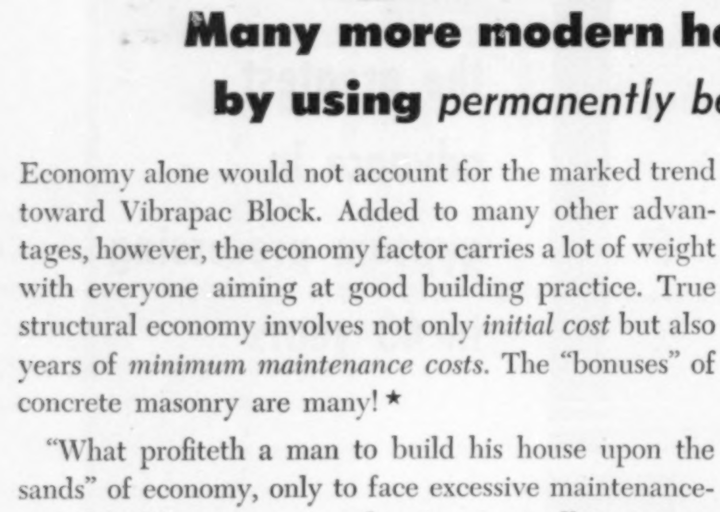
Over FIVE MILLION 8-inch (or equivalent) Vibrapac Block units were used in New York's modern Riverton Apartments (Starrett Bros. & Eken, Inc., builders). No multiple dwelling structure is too big . . . no single home too small . . . to enjoy the incomparable benefits of Vibrapac Block.

Many more modern housing-units to cost less by using *permanently beautiful* concrete masonry!

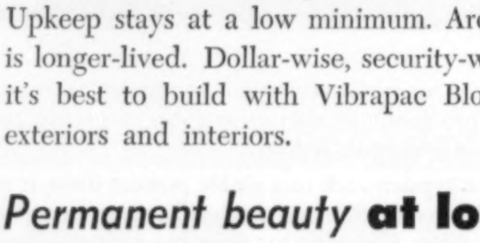
Economy alone would not account for the marked trend toward Vibrapac Block. Added to many other advantages, however, the economy factor carries a lot of weight with everyone aiming at good building practice. True structural economy involves not only *initial cost* but also years of *minimum maintenance costs.* The "bonuses" of concrete masonry are many! ★

"What profiteth a man to build his house upon the sands" of economy, only to face excessive maintenance-costs later? Security against deterioration is all-important.

Since most men have to work the better part of their lifetime to acquire modern shelter, it's very vital to build for *permanent* beauty and decades of comfortable convenience. Modern concrete masonry provides many of the answers to problems of long-service shelter.



Hospital building with exterior walls entirely constructed of exposed Vibrapac Block.



★ High quality Vibrapac Block for both exteriors and interiors . . . pleasing color tones and textures . . . "built-in" insulation advantages . . . sound-absorbing qualities . . . permanent protection from termites and rodents and from damp-rot or deterioration by weather . . . these are some of the many practical Vibrapac block "bonuses".

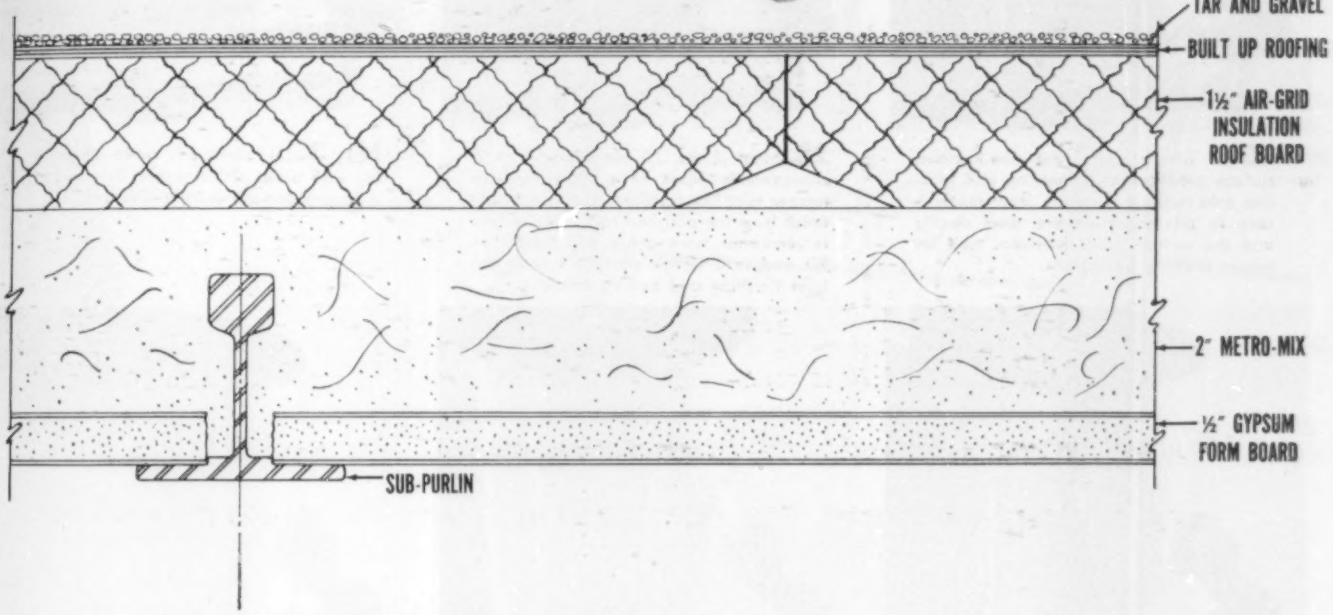
Initial cost of Vibrapac Block construction is low. Upkeep stays at a low minimum. Architectural beauty is longer-lived. Dollar-wise, security-wise, comfort-wise, it's best to build with Vibrapac Block . . . for both exteriors and interiors.

Permanent beauty at low cost!

Less time required for erection . . . reasonable initial cost . . . modular sizes that "make everything fit," thus simplifying installation of door and window jambs and equipment . . . varieties of color impregnations and textures in Vibrapac Block itself . . . and other unique advantages . . . all add up to "more for the money" in modern housing and other structures. Helpful booklet gladly sent on request. BESSER COMPANY, Box 179, Alpena, Michigan, U. S. A.

A-8272-1PR

Roofs "breathe" with new Gold Bond Air-Grid Insulation Roof Board



This air channel makes the lasting difference in roofs built with Gold Bond's new Air-Grid Insulation Roof Board. This channel increases the life of the roof by minimizing surface blistering. Here's how:

Summer sun can raise temperatures within a flat roof to 150°. Tiny pockets of air, trapped in the roof during construction, expand and force themselves up through the joints between ordinary insulation roof boards. This can cause surface blisters.

With Gold Bond's new Air-Grid Insulation Roof Board, bevelled edges on all four sides of each board form a grid of air channels over the roof area. The air has room to expand along these channels. Risk of blistering is minimized.

Result? Longer roof life. Air-Grid is another addition to a lengthening Gold Bond® line of improved building products and processes. National Gypsum Company, Dept. AF-38, Buffalo 2, New York.

Gold Bond
BUILDING PRODUCTS

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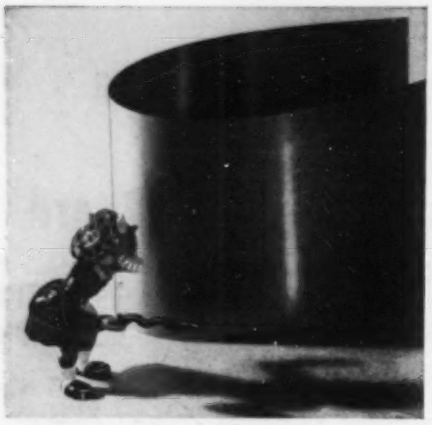
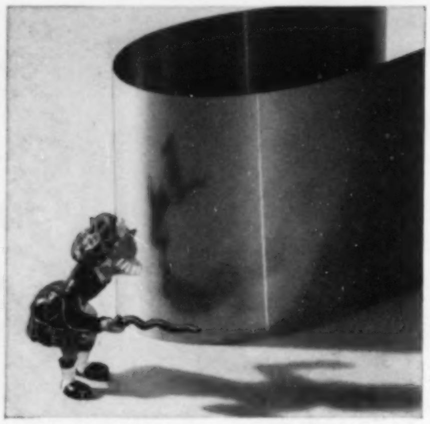
No matter which *FINISH* you like—you can buy it in

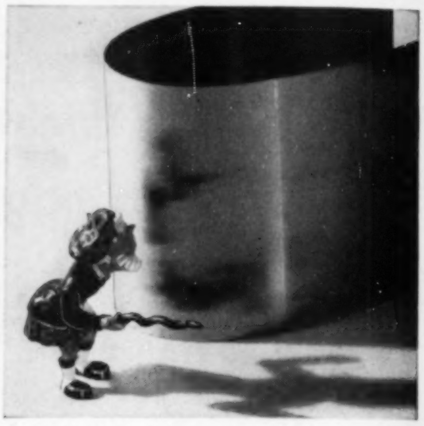
MicroRold® QUALITY STAINLESS STEEL



2D—A silvery white, but non-lustrous, surface produced by annealing and pickling cold reduced material. Steel sheets & strip in this condition are most ductile and the surface holds lubricant well for severe drawing operations.



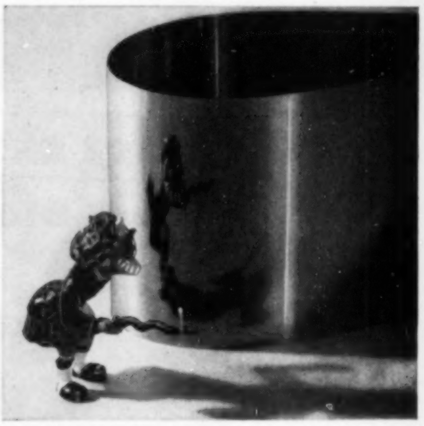
2B—Steel in the 2D condition which is subsequently rolled on a "skin pass" or temper mill. The surface acquires a bright finish from the polished rolls. This surface is somewhat more dense and hard than 2D and is a better starting surface for later finishing and buffing operations.



No. 3—This surface is made by grinding with a No. 100 abrasive. This surface is smooth but not as reflective as 2B.

No. 4—A finer finish than No. 3 made by grinding with a No. 150 abrasive. Like No. 3, this surface is easily blended with hand grinders after forming, drawing or welding.

No. 7—Good reflectivity and brilliance made by polishing with a No. 400 abrasive. This semi-mirror finish must be protected during fabrication by adhesive paper or strippable plastics lest the finish be marred beyond repair.



BRIGHT—A highly reflective surface made by cold reducing with highly polished, glass-hard rolls. This finish is only available in Type 430 stainless.

These are our standard surface finishes that are available in types 201, 202, 301, 302, 304 and 430 except Bright which is type 430 exclusively.

These finishes are regularly supplied in sheet and coil form in widths up to 48 inches.

Since Nos. 3, 4, 7 and 430 Bright are smooth reflective surfaces, they are not recommended for severe drawing without special precautions as the mill finish may be marred. Applications such as dairy machinery, kitchen and restaurant equipment and architectural decorative work require only local forming, so these highly polished surfaces are not greatly disturbed. All mill polished sheets are carefully packed to avoid handling imperfections. Protective adhesive paper can be specified by the buyer when needed.

For specific information on recommended surface characteristics for a particular stainless steel sheet and strip application, address your request to our Product Development Dept.

Washington Steel *Corporation*

Producers of Stainless Sheet and Strip Exclusively

3-K WOODLAND AVENUE, WASHINGTON, PA.

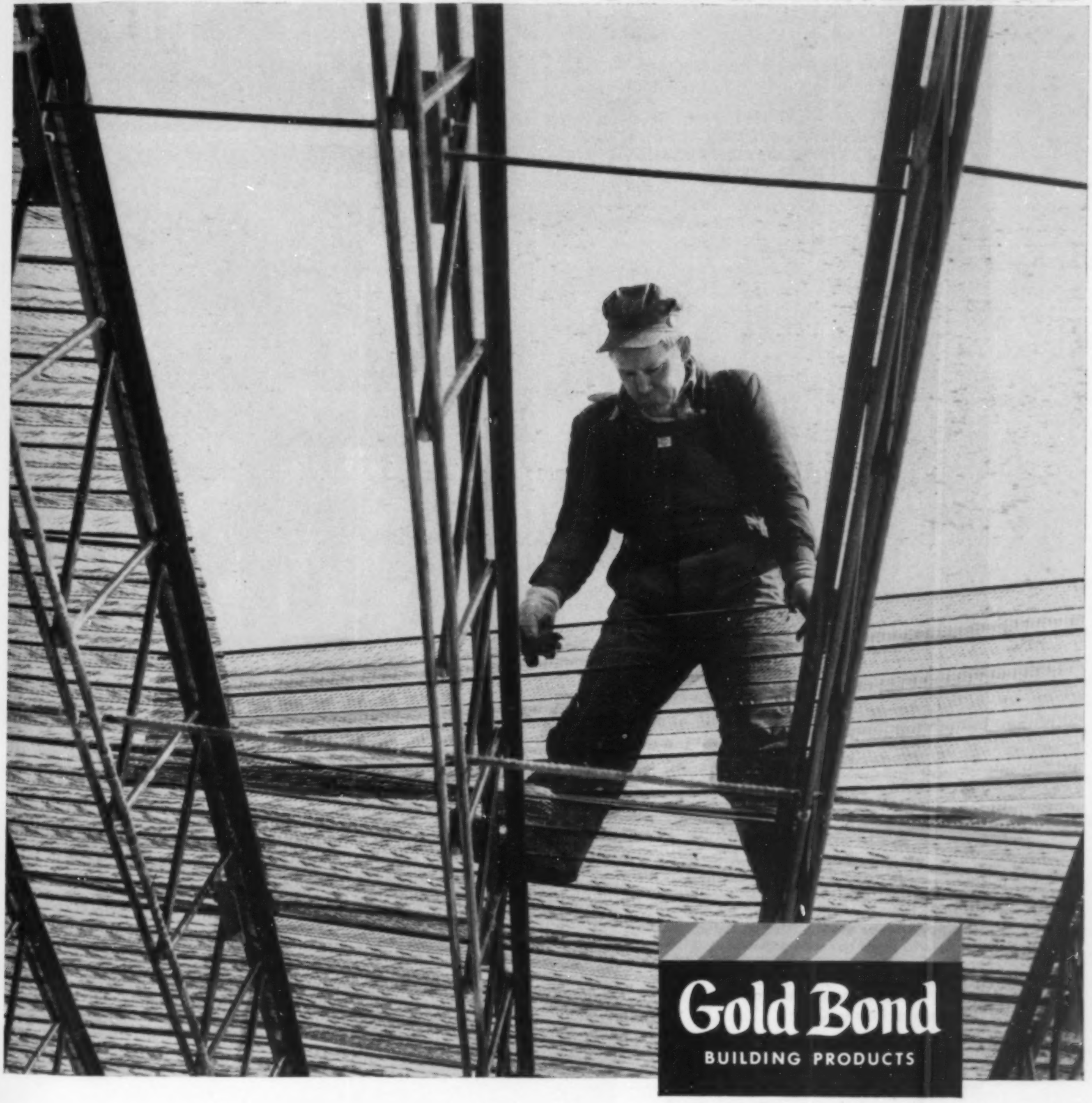
Gold Bond Metal Lath Centering

You combine a rigid pouring form with excellent slab reinforcement when you specify Gold Bond ⅜" Rib Lath for centering in poured concrete roof and floor slabs.

Gold Bond® ⅜" Rib Lath offers exceptional reinforcing for concrete because it is mechanically bonded to the very bottom of the slab — the place where tension stresses are greatest. And there's no need for stretching or for erecting costly temporary bracing — the lath is simply laid across the joists and easily clipped in place.

For complete technical data, write Dept. AF-38, National Gypsum Company, Buffalo 2, New York.

RIGID REINFORCEMENT



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BUILDING PRODUCTS

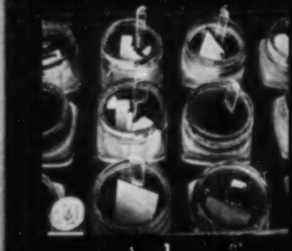
NATIONAL GYPSUM COMPANY

TRUSCON STEEL WINDOWS WITH N

7 TOUGH TESTS PROVE SUPERCOAT PERFORMANCE

1. SOAK TEST simulates field condition of windows standing overnight in a pool of water before installation.
2. SALT SPRAY TEST parallels coastal area atmospheric conditions.
3. WEATHEROMETER TEST duplicates the field condition of exposure to strong sunlight.
4. ABRASION TEST simulates abrasive materials rubbing against frames during installation, and abrasives windblown after installation.
5. HUMIDITY TEST parallels field conditions of humidity inside and outside.
6. ALKALI TEST duplicates field conditions of washing windows with ammonia, rain dripping off mortar, plaster, etc.
7. MAR PROOFNESS TEST simulates field condition of sliding frames across one another in handling.

SUPERCOAT PASSED THEM ALL!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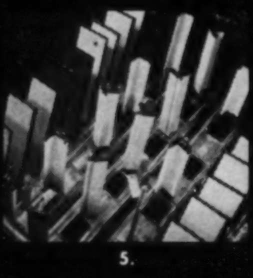
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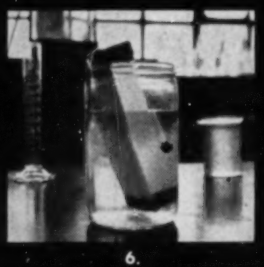
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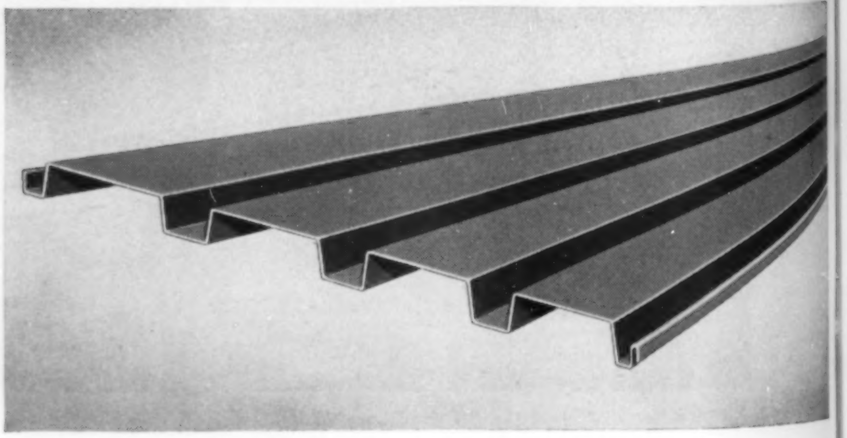

NOW! Truscon Ferrobored® Steel Roofdeck is a full two feet wide. New, wider Ferrobord available in lengths up to 32 feet, 6 inches. It roofs large areas quickly. Straight lay means that several crews can roof without delay. All work is done from above—Ferrobord is quickly welded to top chords of joists or purlins. It is light, strong. Fire-resistant. Available now. Send coupons for specs.

NEW SUPERCOAT FINISH

Install without painting! Stave off maintenance painting!

Now, you can have the solid strength of steel windows and avoid painting costs, too. New Truscon Supercoat Process is factory-applied to eliminate all field painting . . . both at installation and during the years.

This outstanding Truscon development has been thoroughly laboratory-tested—for weather, atmosphere, time, and abuse. It has successfully met each challenge. Read tests at left.

Supercoat is a two-coat baked enamel that originally was developed for water-using appliances in which corrosion must be avoided. This superbly smooth, hard and glossy finish has been improved by the research laboratories of Republic Steel to further withstand exterior exposure.

As a result of this development, there is no need to sacrifice strength and solidity in window sections simply to avoid painting. Supercoat Process can be furnished now on specification in factory shipment on all Truscon Steel Windows for commercial, institutional, and industrial construction. Standard color is a light grey. Six more colors on special order. Send coupon for free Supercoat sample.

REPUBLIC STEEL LOCKERS now Bonderized to lock paint on, lock rust out! Bonderized steel surfaces take and hold a firm grip on enamel. If chipping or scratches occur, underpaint corrosion is confined to a small area. Republic Steel Lockers look better, last longer, even when subject to rough handling in schools, industrial plants. Yet, they cost no more. Send coupon for facts.

REPUBLIC STEEL KITCHENS feature Perma-Finish enamel over Bonderized steel for long-lasting beauty and efficiency. Perma-Finish is tough, pliable, resists damage, stays color-true. In white, yellow, turquoise and pink. Republic Steel Kitchens give you a wide choice of styles, sizes, door and drawer arrangements. Ideal for use in school and industrial kitchens and laboratories. Complete selection in distributor stocks, details in Sweet's File, or send coupon for facts.

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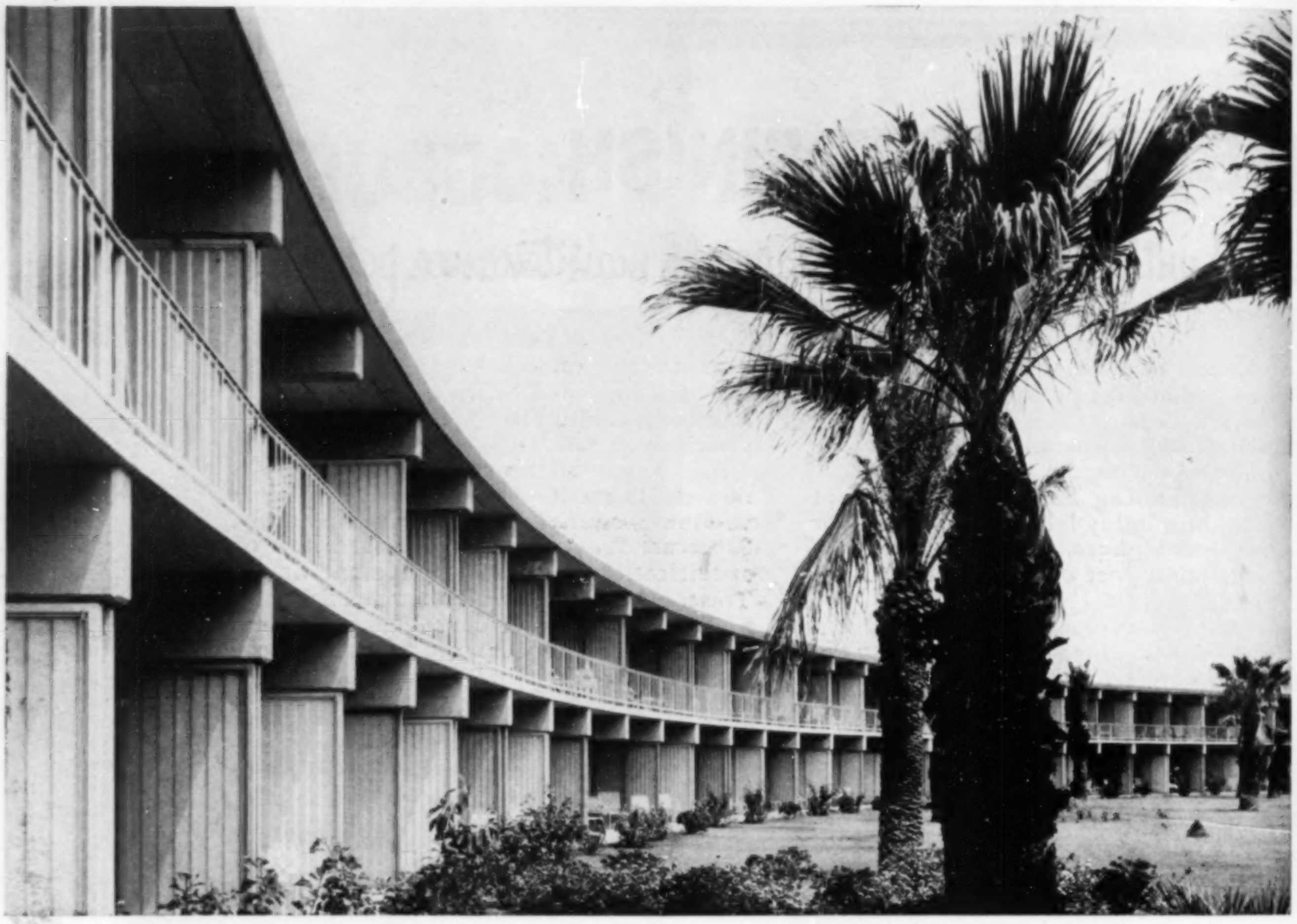

Precast Floors and Roof on Precast Frame

The new Seahorse Hotel in Galveston, Texas is unusual because it is all precast concrete. The frame is formed of 51 concrete bents cast on the site and erected as shown in the photo below, left.

The second floor and roof are 6" x 16" precast Flexicore units, which clear span an average of 13 feet between bents. The Flexicore slabs were left exposed for guest room and sun deck ceilings, and were cantilevered to provide covered walkways. Flexicore units are hollow-cast concrete slabs that can be designed for clear spans up to 26 feet for floors and 30 feet for roofs.

The Seahorse Hotel is owned by the Beach Corporation of Galveston. Thomas M. Price was the architect and R. L. Reid the structural engineer.

A six-page descriptive folder on this project showing plans, sections, and details is available to architects, engineers and contractors. Write or phone any of the manufacturers below or The Flexicore Co., Inc., Dayton, Ohio. Ask for Flexicore Facts No. 77.

Left: Erection of precast bent. Center: Flexicore slabs used for second floor and roof. Right: Flexicore exposed for guest room ceiling.

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The Alabama Cement Tile Co.
COLORADO, Denver 1, PO 366
Flexicore Company of Colorado
FLORIDA, Tampa, PO 2189
American-Marietta Company
ILLINOIS, Chicago, Franklin Pk.
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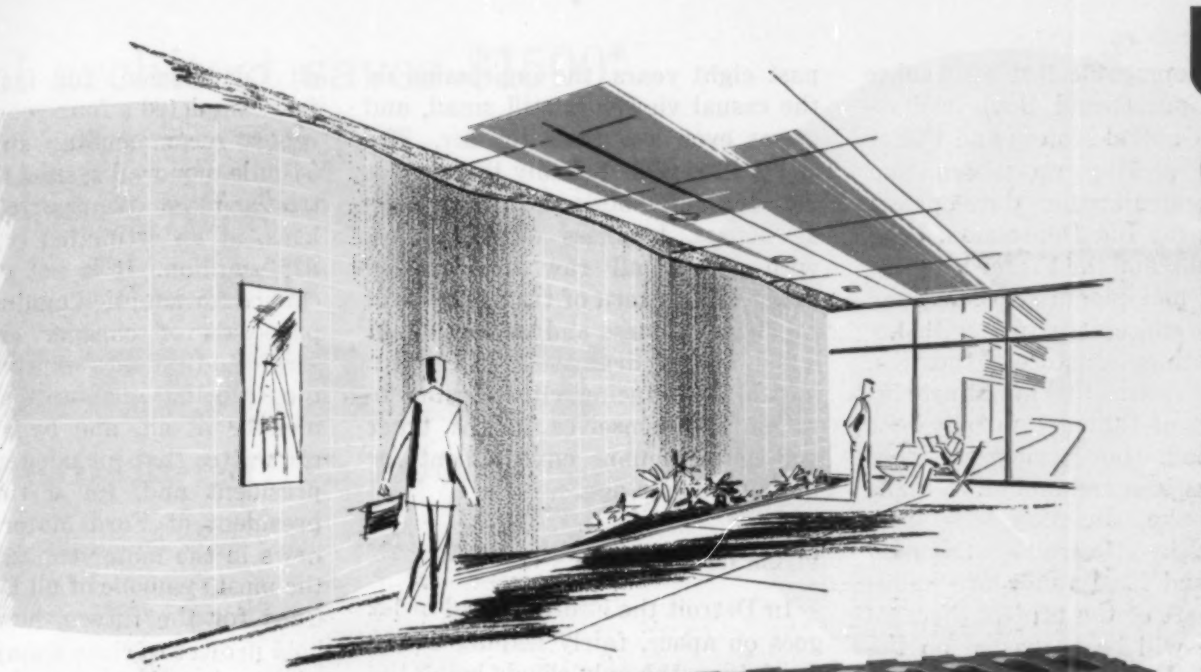
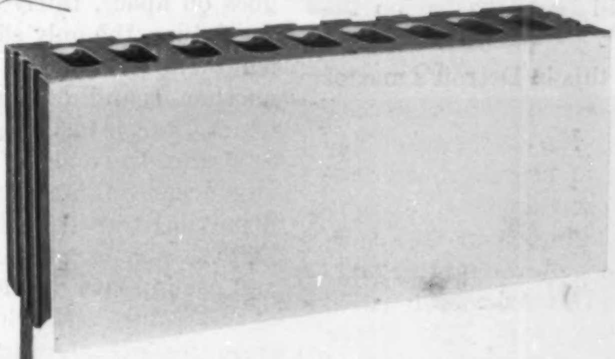


STARK IDEA FILE

An idea!

BEAUTIFUL
LOW-COST WALLS
cut echoes
...add interest



The original serpentine wall was one brick thick and derived its strength from its smooth, flowing shape.

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DETROIT *continued from page 101*

trial development called Milwaukee Junction, out Grand Boulevard toward the General Motors and Fisher buildings, picking up where that early decentralization development left off in the Big Depression. Here Albert Kahn and the Fisher brothers originally had planned to surround their huge office structure with hotels, apartments, stores, theaters, and a new railroad terminal nearby. Some part of that dream may now be realized, but oriented more toward business and industry. Plans for Milwaukee Junction have been approved by Detroit's Common Council, and local funds are available for part of the project. Federal assistance will be requested on the balance.

Beyond all this in Detroit's master plan, there is a most important section devoted to the conservation and rehabilitation of neighborhood residential areas threatened with blight, a vast undertaking. Some 155 such areas are shown on the master plan, of which 55 are marked for action in the next ten years. This is one of the biggest programs of its kind in the U.S., greeted enthusiastically by planning experts and ACTION committees alike because it gets down to the grass roots of urban renewal. While the program is moving slowly in actual physical change, it is moving soundly in first cultivating neighborhood groups and committees, drawing them into the integration of such things as playgrounds, schools, and street plans to promote more cohesive neighborhood units. And there are some physical evidences of the program, ranging from the distribution of some 100,000 new, standardized, covered garbage cans, at great sanitary savings to the city, to replace the old oil drums and miscellaneous containers previously used, to the complete restoration of one of Detroit's square-framed 1917 houses, at a cost of $5,679 to show that these relics may be made solid and livable again. This is a new kind of model home and a symbol, drawing some 1,000 visitors each week.

All this is still interim. For all the vast building that has gone on in the past eight years, the impression on the casual viewer is still small, and seems even less from the air. The city still reveals nakedly the conflict between automobile and urban rows of houses, business offices, shops, with scenes all raw and ragged where the pattern of traffic flow still produces ugliness and waste. All of which simply dramatizes the monumental task facing cities trying to refashion themselves into a truer and more humane environment for the automobile age.

Vision for the future

In Detroit the effort toward order goes on apace, fairly leaping out to the future, the only clouds being the lengthening business recession and another round of labor contracts, which Detroit has weathered before. Still ahead are six of the ten core-city areas or "neighborhood" complexes, patterned on the Civic Center, in various stages of planning and preliminary development. Three of these are fairly close on the horizon for actual construction. The first is a 77-acre tract, close to the river, once Detroit's original Irish settlement known as Corktown, which will be dotted with small factories for light industry, set in a parklike landscape, to accommodate enterprises moved out of the Civic Center area and others ready to locate close to a projected post-office freight building nearby. Condemnation is beginning, with construction scheduled for next year. The second is a 94-acre tract north of the Civic Center, known as Skid Row, where final plans are being drawn for a trafficfree, parklike complex of office and utility buildings within walking distance of the central business district. The third is a new 236-acre medical center, east of Woodward near Wayne University, not part of the original city plan, which will be an amalgam of four old hospitals and new research and medical school facilities situated on blighted residential land, financed by private, city, and federal funds.

That Detroit is tussling in unusual ways with its problems is evident in still other directions. A Rapid Transit Commission, for instance, has just completed a four-year study and report recommending an advanced, 54-mile monorail system to solve Detroit's mass transportation problems, at an estimated cost of some $250 million. It is not given much chance for adoption against counterproposals of cheaper express bus service on the new expressways, but the fact that monorail was recommended at all, and by a volunteer committee that included a bank vice president and, for a time, a vice president of Ford Motor, is signal news in the motor capital. Perhaps the most symbolic of all Detroit's actions for the future, however, is a bold project to close a major portion of Woodward Avenue from Grand Circus to the Civic Center to all but foot traffic, diverting wheeled traffic around the area and making of the street a plaza and promenade (sketch, page 99). In the heart of the city, Judge Woodward's horizon-walking man may yet stretch his legs again.

This may come as soon as 1962, when Detroit plans to hold a World Trade Fair not merely to promote trade but to show off its completed Civic Center and Woodward Mall, with the rebuilt downtown as fair grounds. By then many of the projects mentioned above will be completed or well underway. A flag-decorated pedestrian mall in the heart of Detroit, which may be opened with the fair and may then be a central symbol of the new order.

The symbol may in the end grow to encompass the essential vision of Detroit's planners and civic leaders. The vision is that an industrialized society need not mean intolerable congestion and delay, traffic hazards and frustrations, endless square miles of bleak or featureless dwellings around awesome square miles of industry. A highly industrialized, mechanized, or even automatized community can, if it will, become, in Charles Blessing's words, "safe, humanized, efficient, and beautiful." Of beauty it is perhaps best not to speak too much, for if the other requirements of human life are well and economically met, beauty will be added to them. END

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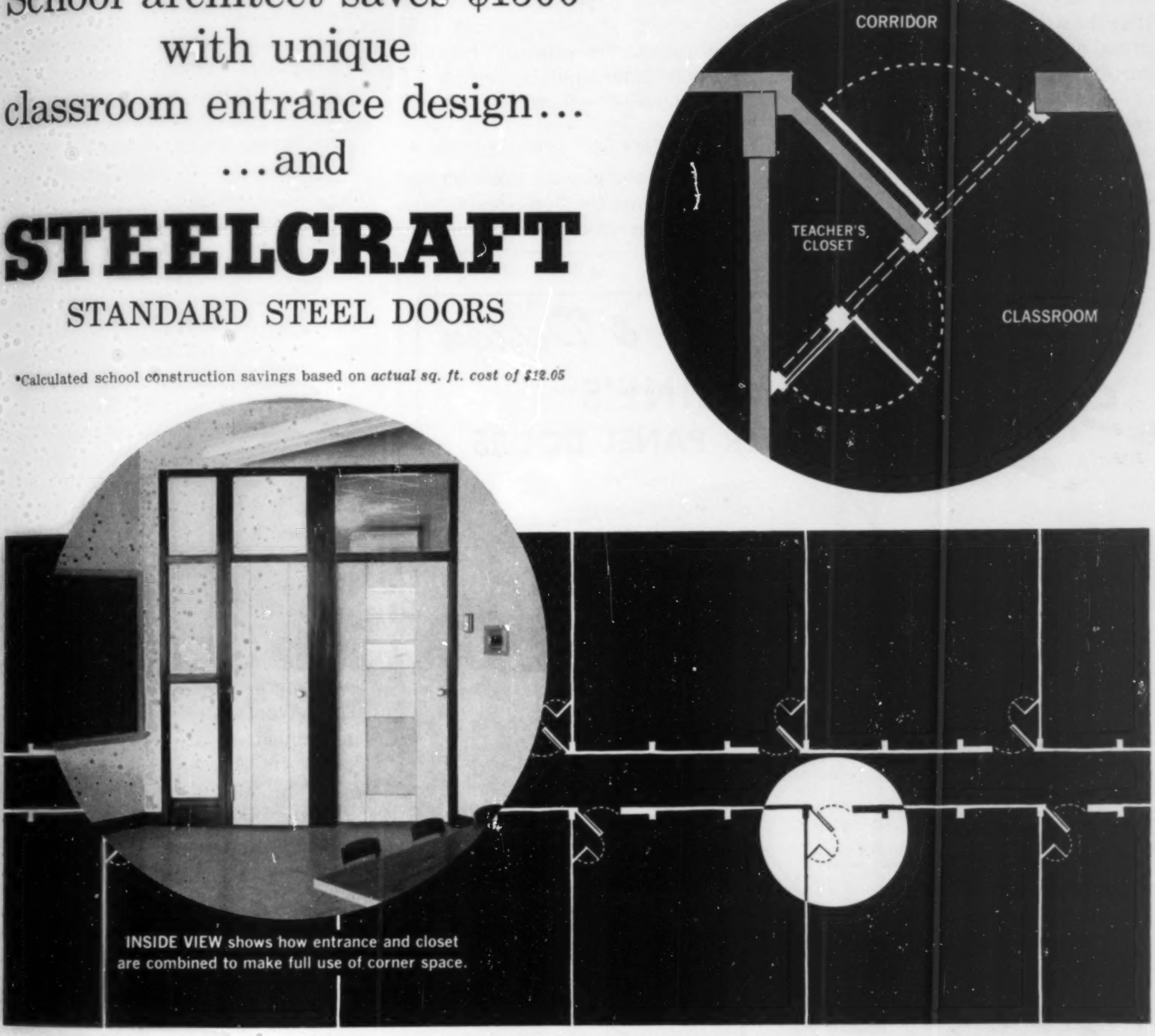

INSIDE VIEW shows how entrance and closet are combined to make full use of corner space.

Miami Shores Elementary School, West Carrollton, Ohio   Architect: Walker Norwick & Associates, Dayton, Ohio

To reduce corridor width and still meet code requirements for unobstructed traffic flow, the architect positioned entrance doors in obliquely recessed openings so that they would not swing into corridor. This angular entrance design cut 3 feet off corridor width, resulting in substantial construction savings.

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HOUSING POLICY *continued from page 107*

ignored the advice of one of the nation's largest mortgage institutions that the owner-builder be allowed to draw out 50 per cent of current earnings and apply only 50 per cent of earnings to accelerated mortgage reduction. With that kind of a "half now and half on liquidation" incentive, FORUM believes many builders might be willing to try to build some rental units. But on a "no return until liquidation" basis (except the one-shot 5 per cent), the proposal would probably attract only a few patient "investment" builders primarily interested in setting up "estate income" situations.

▸ *Revise taxes that penalize renters*

There is one glaring tax discrimination against the home-renter who is usually a city dweller, as compared with the home owner, who is usually a resident of the suburbs. Because the operation of one's own home is not a business, or an investment that yields a net return in dollars, there are no corporation or income taxes charged against it. But a firm operating an apartment by contrast must pay business or income taxes, which ultimately must be absorbed by the occupant. In the case of apartment operation by a corporation, the tax may range from 30 per cent to 52 per cent—thus making the U.S. Treasury the tenant's second, "hidden" landlord. To retain $1 of profit after paying this tax, a rental housing corporation must collect up to $2.04 from the tenant, the indirect taxpayer.

One way to eliminate the corporation tax would be to enact legislation favored by NAREB that would give real estate investment trusts tax-free "conduit" treatment. Income from real estate assets passed along to trust participants would be exempted from taxation at the trust level in the same manner that income received by securities investment trusts is now exempted. The advantages of this real estate investment trust plan were published in *A Remedy for Rental Housing* (FORUM, December 1957).

A study by ACTION (the American Council to Improve Our Neighborhoods) by Research Economist Louis Winnick has found that an average home owner itemizing his mortgage interest and real estate tax deductions gets a U.S. income tax break equal to a $10-a-month drop in his housing costs. This ACTION study, *Roadblocks to U.S. Housing,* proposes that equal income-tax treatment should be provided for renters and owner-occupants—by repealing these deduction privileges for home owners, or else giving them to renters, too, for that proportion of their rent payments covering interest and tax charges. FORUM concurs.

IV. Aid to public housing

Shortly after he took office in 1953 HHFAdministrator Albert M. Cole told a NAHRO convention that he was going to "fight" for public housing. In the years since 1953, however, the federal public housing program has slowed to a snail's pace

continued on page 176

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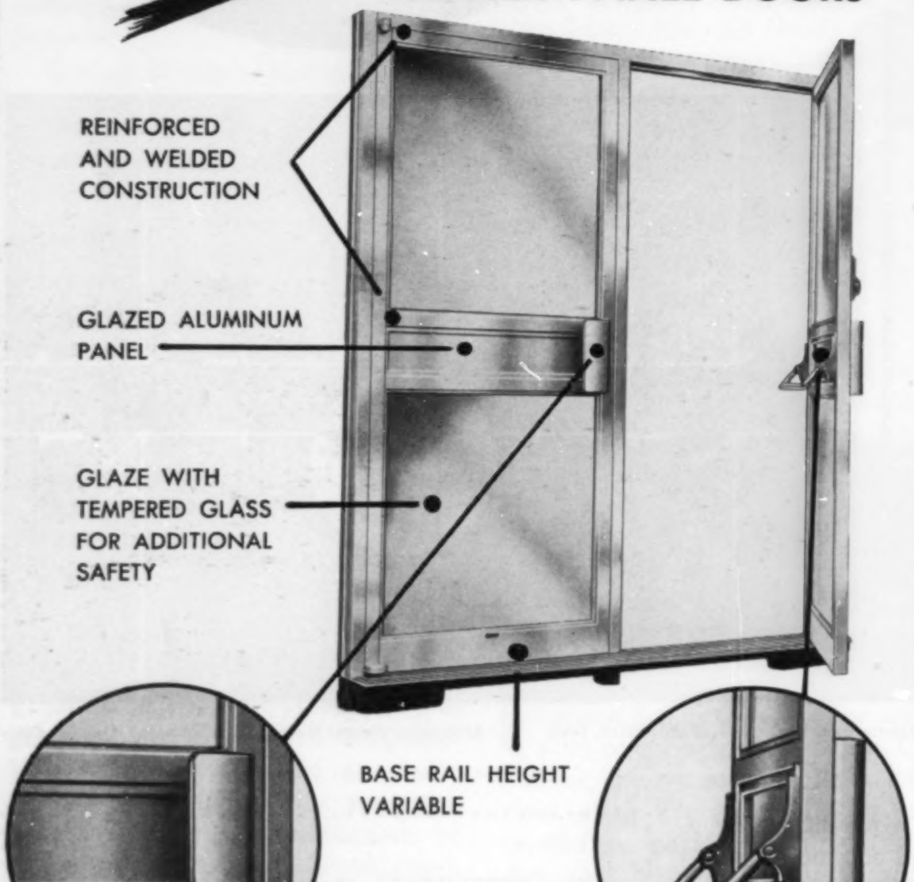
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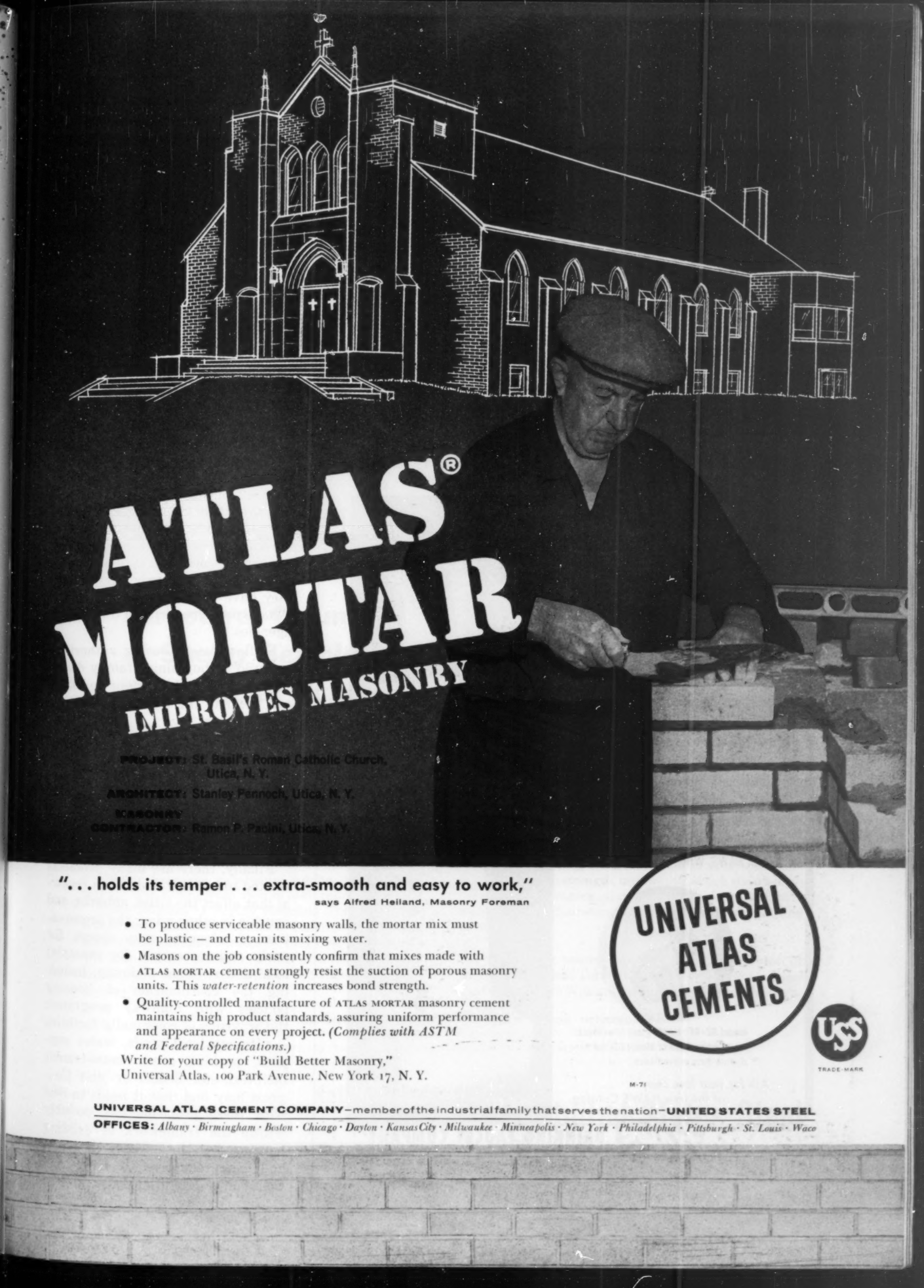

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HOUSING POLICY *continued from page 174*

(see *The Dreary Deadlock of Public Housing*, FORUM, May and June 1957), and Mr. Cole has yet to demonstrate any aggressive activity on behalf of public housing. This year the administration is not requesting any new public housing authorizations, but merely an extension of time permitted for making commitments under existing authorizations.

In the face of this diminished program, the problem has become more urgent, because of the influx of minorities into central cities. Not only are they not accepted in existing private housing, except in the slums, but only a trickle of new housing is being erected by private enterprise for even that part of the minority group which could well afford it.

Of all federal housing programs, none is in greater need of a complete review and reorientation than public housing. For one thing, the problem of public housing cannot be separated from urban renewal so long as the latter includes any "safe, sanitary, and decent" relocation requirement. Here are some of the many constructive proposals for giving public housing a "new look" that were recommened by a group of experts in the June 1957 FORUM, and which FORUM now recommends for adoption:

▸ Erect fewer large "institutional"-type projects.

▸ Give the housing subsidy to the family rather than the project, so the family can rent regular housing.

▸ Allow tenants to remain in public housing projects even if their income increases, but increase their rent to an economic level and encourage them to buy their apartments. (This is especially urgent in the case of occupants belonging to minorities, because it would give them almost the only opportunity they have to become self-respecting owners not dependent on the welfare agencies.)

▸ Allow local housing authorities to build or buy single-family dwellings in scattered locations and later sell them to the occupants as their incomes rise.

▸ Buy and rehabilitate individual houses for public housing use in urban renewal areas, thus accomplishing two purposes (rehabilitation and public housing) at once.

Community facilities problems

Finally, there are many problems related to housing and urban renewal that affect the cities, suburbs, and exurbia in other ways: the preservation of adequate open spaces for parks and recreation, for example; local and regional planning, including the coordination of housing policies with highway programs; the provision of community facilities—adequate local roads, water supplies, parking areas, mass-transit facilities, etc. Sooner or later Congress may find that it needs to deal with these problems too, possibly within the framework of existing housing law—or possibly in a new and comprehensive Housing and Community Facilities Act. END

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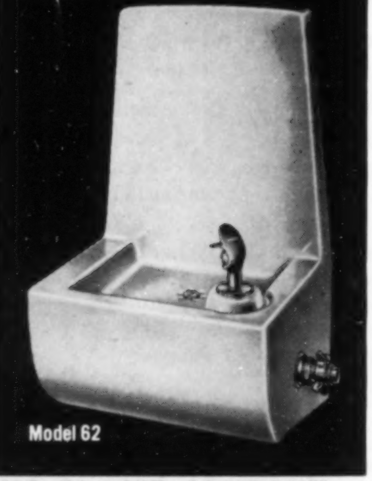

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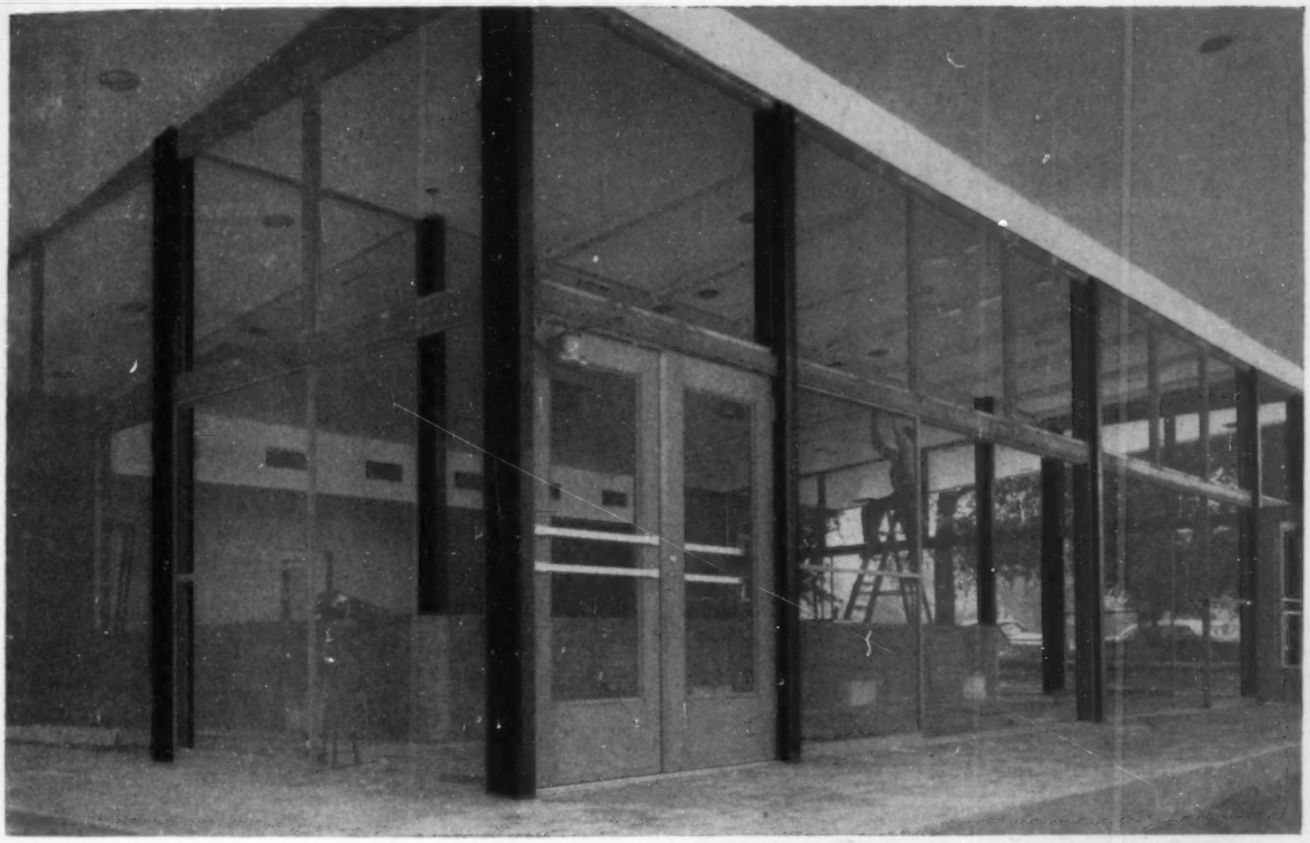

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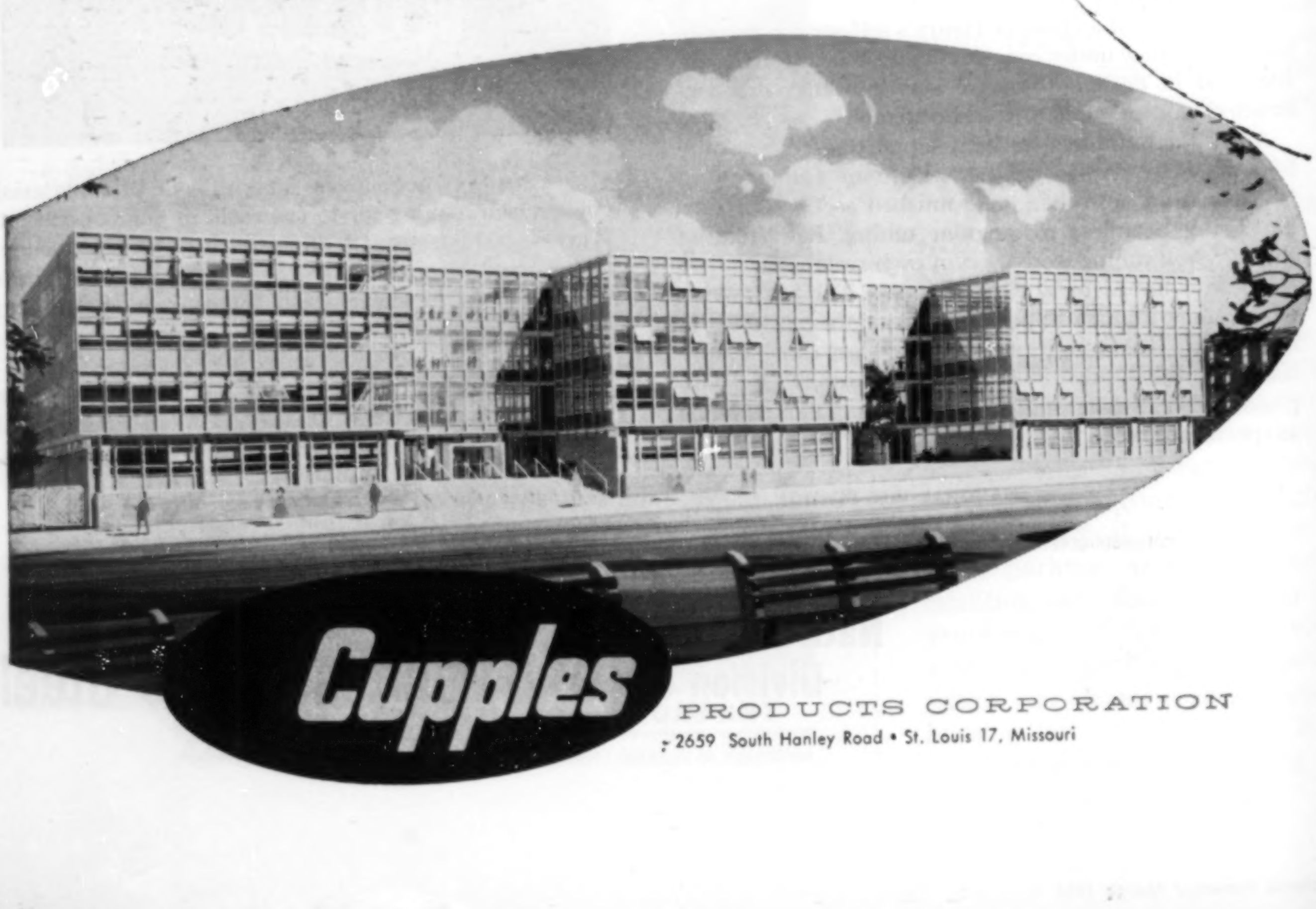

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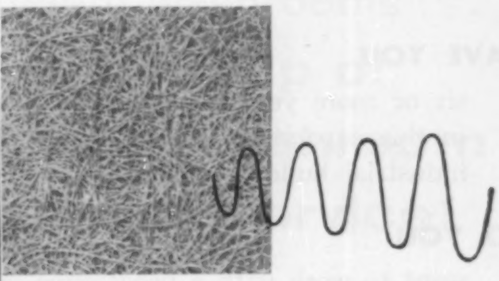

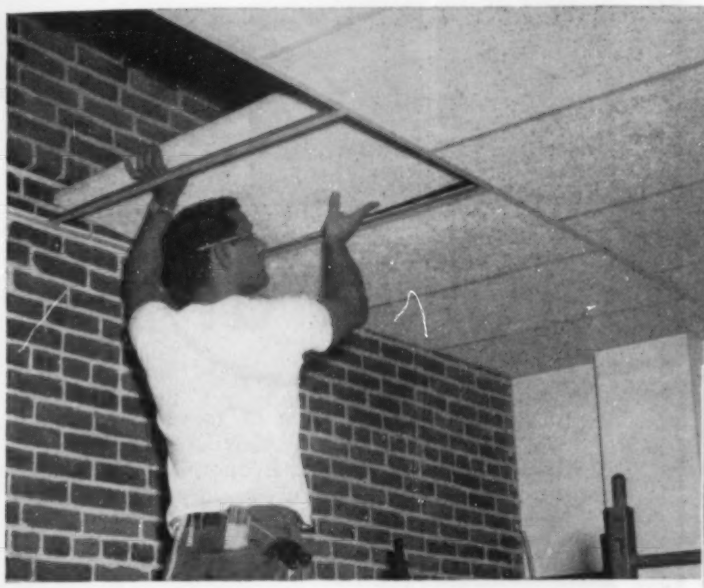

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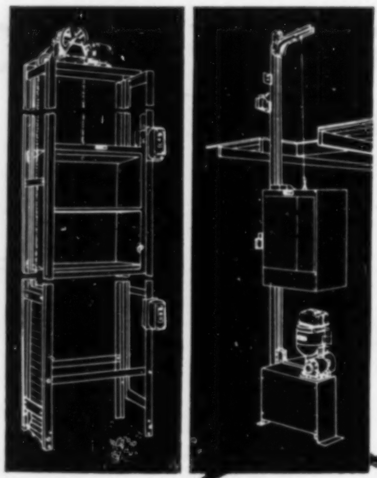

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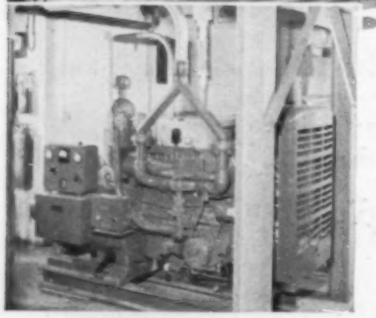

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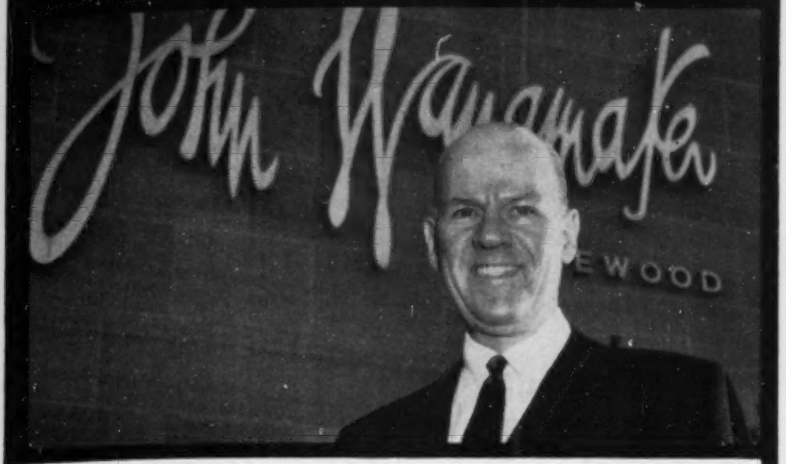

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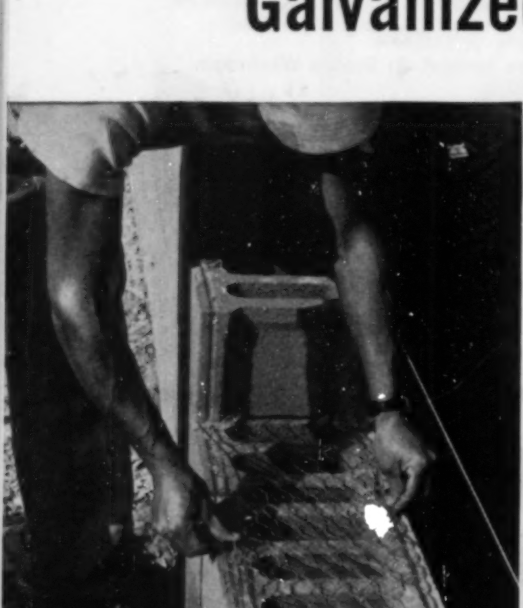
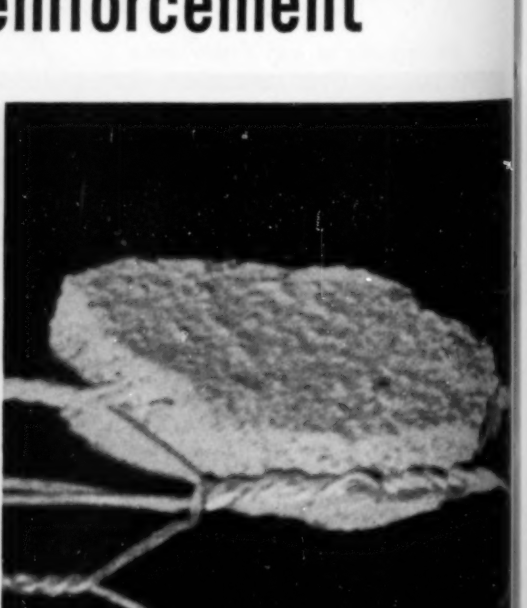
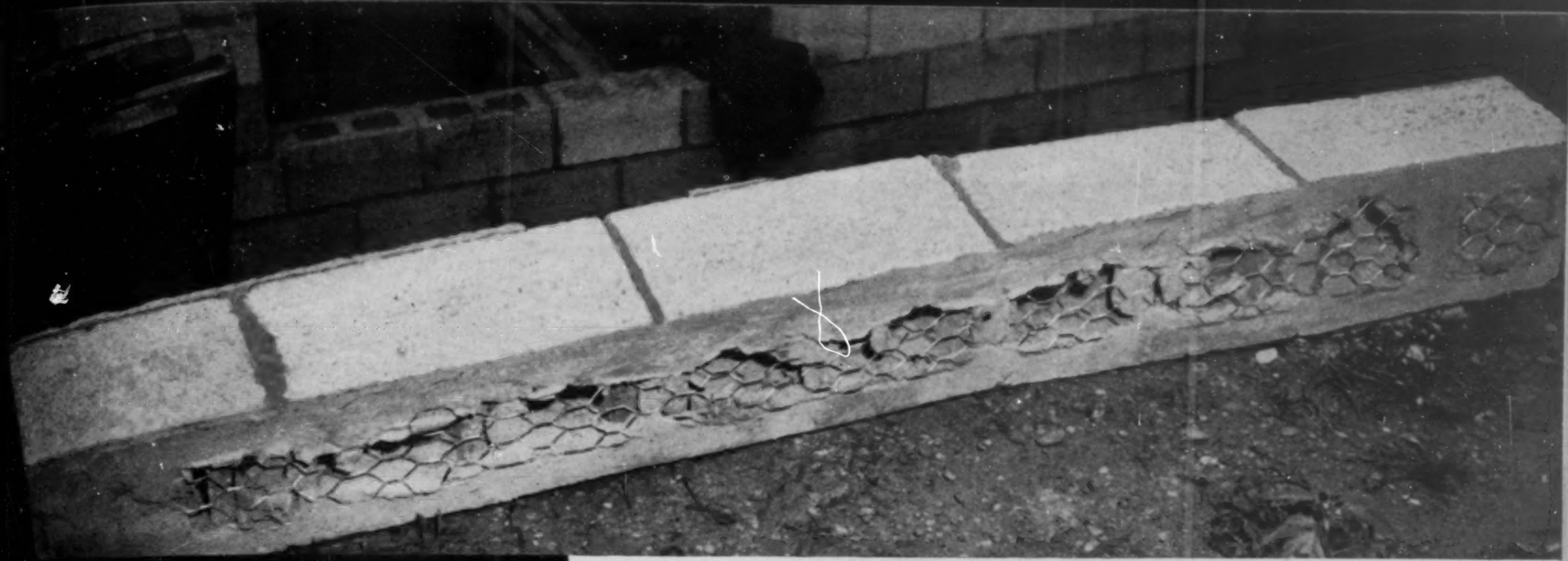


"I have no problem getting masons to lap KEYWALL. I prefer a 2-foot lap. When it's lapped, it doesn't interfere with the embedment. Yet it gives the full reinforcement value of continuous wire," Mr. Gans points out.

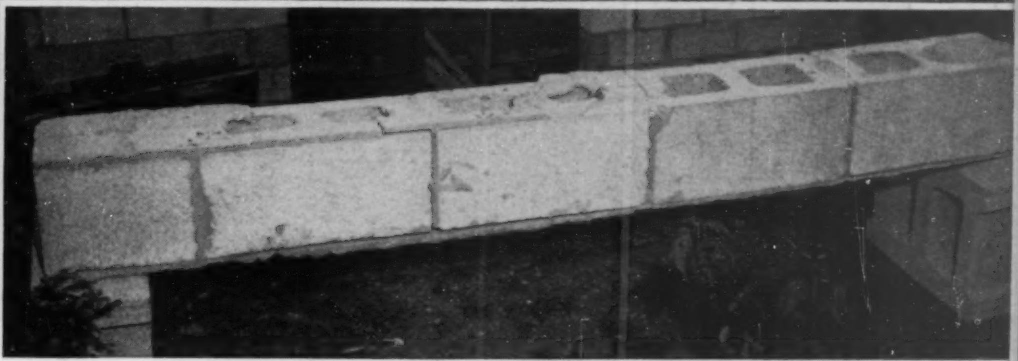
Wherever walls intersect, Mr. Gans uses KEYWALL to tie them together. "It is easy to place in alternate joints as shown," he explains. "And KEYWALL bends out of the way, removes the hazard of projecting rods or wires."



"Reinforcement is only as good as its bond. This section of joint shows how KEYWALL is fully embedded in the mortar to provide an exceptional bond. Actually, the hexagon mesh becomes locked into the mortar," says Mr. Gans.



Note the full embedment of the face shell of these units. KEYWALL helps hold mortar in place, giving a stronger, more weather-tight wall.



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"You can't beat KEYWALL as a wall tie," according to Mr. Gans. "It does everything a wall tie should do, and does it better. In addition, it gives reinforcement. What's more, this double-duty product costs no more in the wall than the ordinary non-reinforcing type of wall tie. With KEYWALL I omit header courses, too. KEYWALL doesn't shear when walls move, as header brick do. It's easy to see why I'm so enthusiastic about KEYWALL."

Can you picture this school without glass?

It would still be St. Luke's School in Seattle, Washington. But it wouldn't be the same *building* by any stretch of the imagination.'

Here's why: The school is glazed with panels of Spandrelite, heat-strengthened glass with an eye-appealing color—Cavalier Red—fused to the back. Spandrelite and the expanses of transparent glass that complement it contribute enormously to the building's appearance—its crisp styling, its splendid ability to bring nature into the classroom, while keeping inclement weather outside.

Furthermore, the large areas of clear, heavy-sheet Pennvernon Window Glass improve the over-all natural lighting of the classrooms. The result is a cheerful, spacious atmosphere in which to work.

Pennvernon and Spandrelite are the perfect combination . . . bringing to life the modern educator's dream of light and beauty in the school.

Design your schools better with PITTSBURGH

Architect: Roger Gotteland, A. I. A. and Associates, Seattle, Washington

CONSULT YOUR ARCHITECT

for information about the use of these famous Pittsburgh Glasses in school construction:

Solex®	heat-absorbing and glare-reducing plate glass
Herculite®	shock-resisting tempered plate glass
Twindow®	the world's finest insulating window
Polished Plate Glass	for clear, undistorted vision
Pennvernon®	window glass at its best
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GLASS

75th ANNIVERSARY 1883—1958

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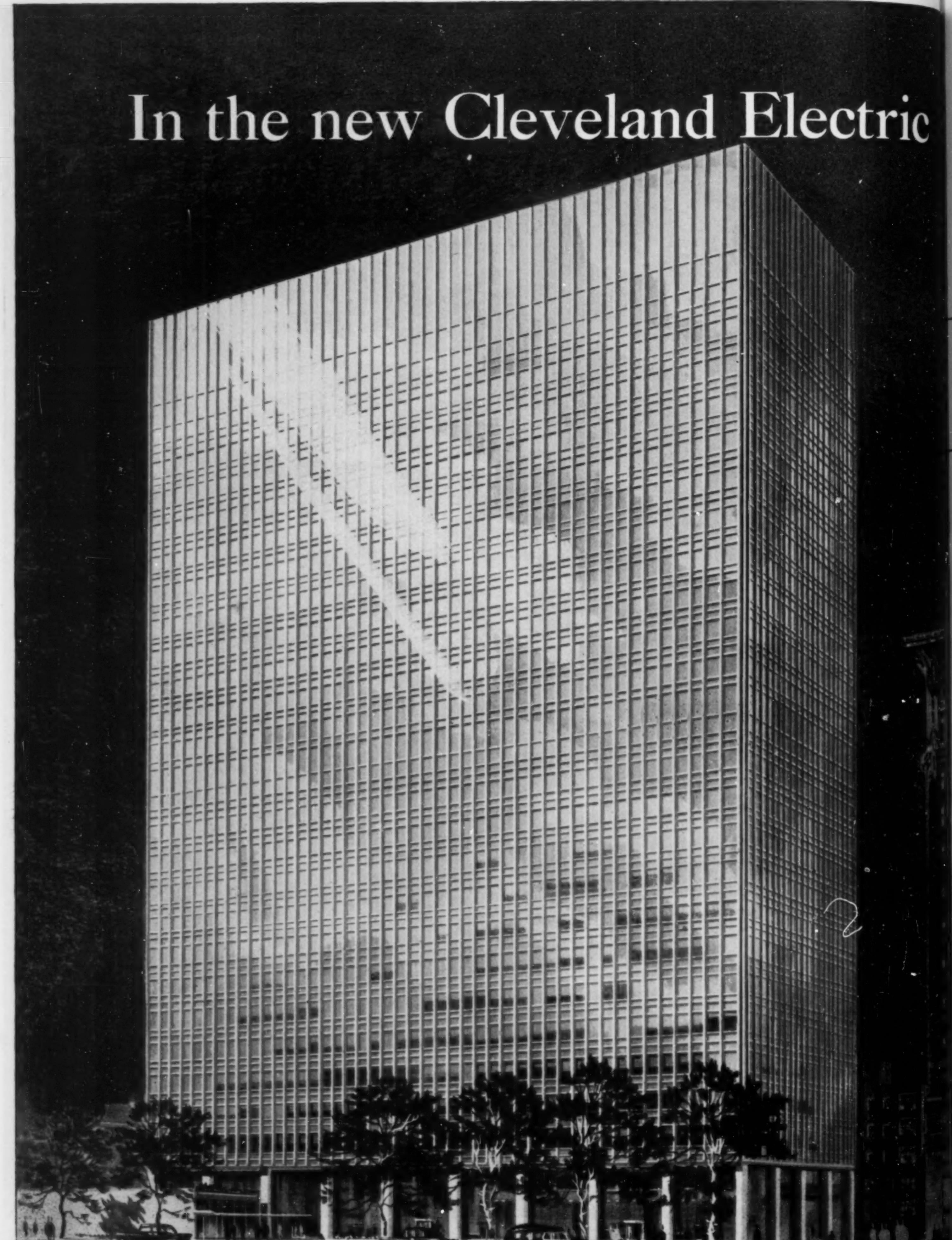
IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

In the new Cleveland Electric



2

Illuminating Company Building concrete joist floors are reinforced with American Welded Wire Fabric

Owner: **55 Public Square, Inc., Cleveland, Ohio**
Architects: **Carson and Lundin, New York, New York**
Associate Engineer: **McGeorge, Hargett and Associates, Cleveland, Ohio**
General Contractor: **George A. Fuller, New York, New York**
Concrete Contractor: **George Paverini, New York, New York**

REMEMBER CLIENTS WILL ASK

"is it Reinforced"

95 TONS OF REINFORCEMENT—American Welded Wire Fabric Reinforcement—were used in the concrete joist floors of the new Cleveland Electric Illuminating Company Building in Cleveland, Ohio. American Welded Wire Fabric gave the thin topping slab of the concrete joist floors extra tensile strength to resist temperature and flexural stresses. It makes a strong, durable floor . . . and is extremely easy to install.

THE HIGH-YIELD-STRENGTH STEEL MEMBERS, closely spaced in American Welded Wire Fabric, also effectively distribute any unusual concentrated load that might occur between joists.

Write for complete technical information about Welded Wire Fabric, Super-Tens Stress Relieved Wire and Strand for prestressed concrete, and other quality construction materials manufactured by American Steel & Wire.

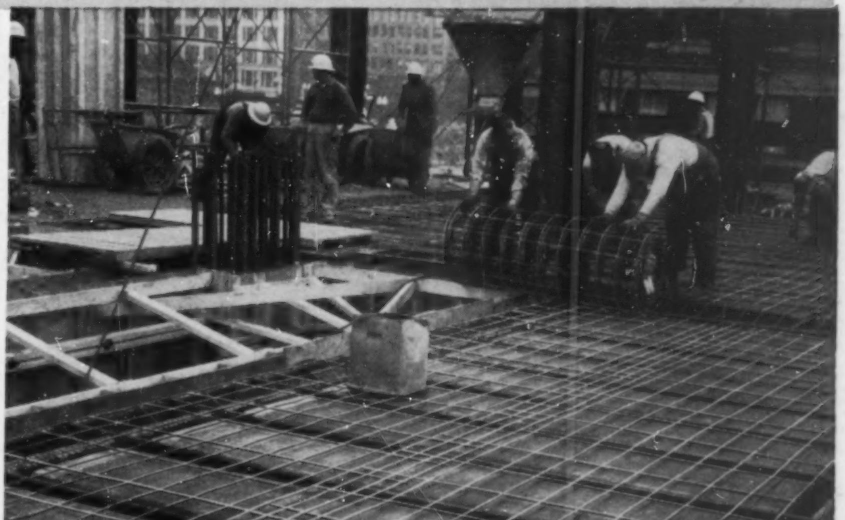
USS American Welded Wire Fabric

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL, GENERAL OFFICES: CLEVELAND, OHIO
Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors
Tennessee Coal & Iron Division, Fairfield, Ala., Southern Distributors
United States Steel Export Company, New York

USS

Other Uses for American Welded Wire Fabric include reinforcement of ground slabs, beam-and-slab floors, and walls. It meets all applicable ASTM specifications.

60" x 150' rolls of 6 x 12, 4 x 4 gage American Welded Wire Fabric Reinforcement were used in the topping slabs of the concrete joist floors. American Welded Wire Fabric comes in a style and size for every concrete reinforcement application . . . is easily installed.



UNITED STATES STEEL

New Leeds and Northrup Co. electronic-controls plant, North Wales, Pa. Architect: L. Rossetti, Detroit, Mich.

ONE OF THE "TOP TEN" PLANTS*

TEN-LIGHT LUPTON PROJECTED WINDOWS, five lights high, blend beautifully with brick and metal sidewalls—provide abundant natural light and air to plant. All-weather ventilation, choice of location and operating position of ventilators, and handsome hardware are a few of the reasons you should specify LUPTON "Master" projected windows for your next project. Photograph by Courtlandt V. D. Hubbard.

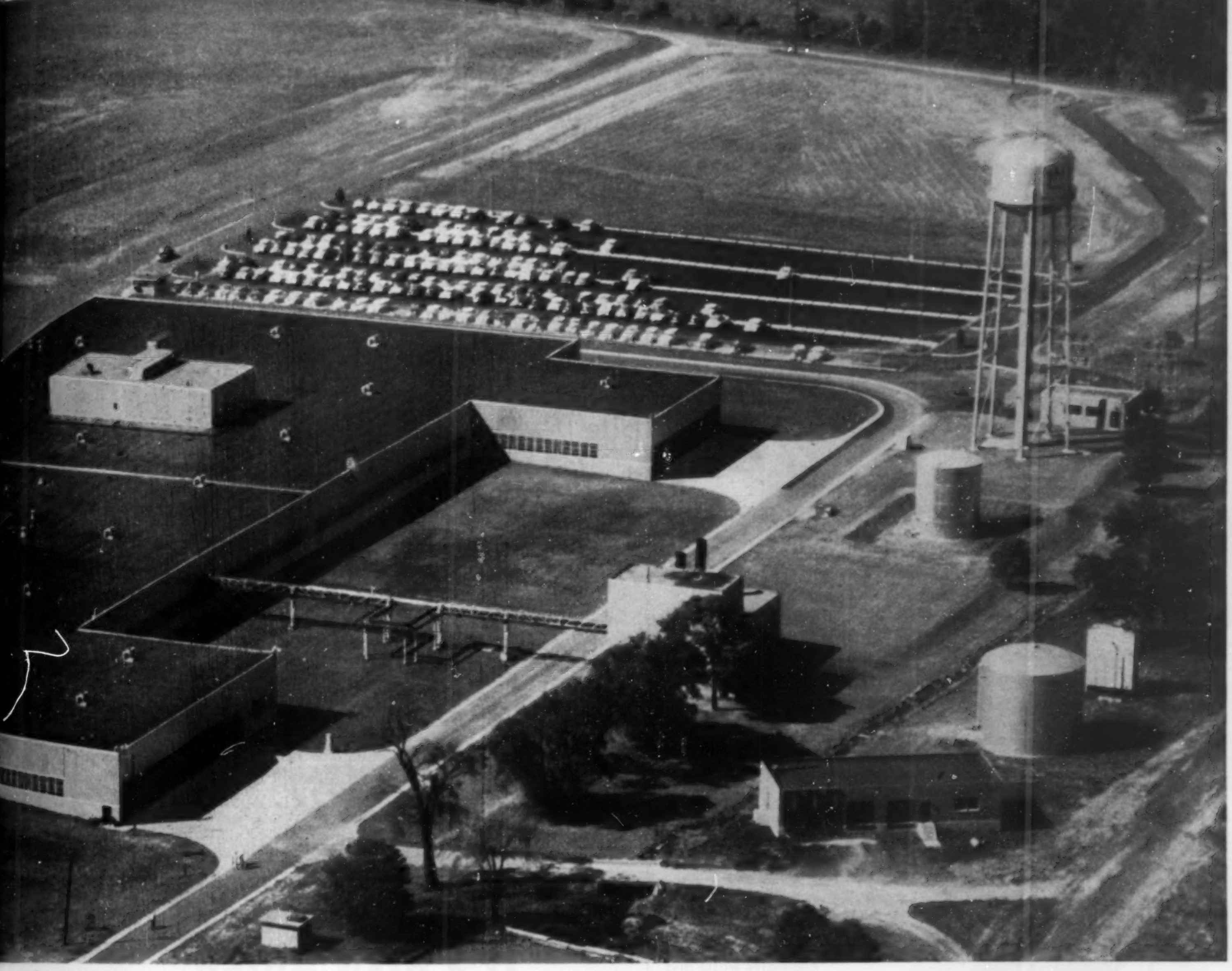
LEEDS and NORTHRUP plans

With an eye to tomorrow, Leeds and Northrup—working with architect L. Rossetti—conceived this new job shop at North Wales, Pa., as the initial building in their new electronic-controls manufacturing plant.

The first of the planned expansions of this building has already been completed. A long section of wall was moved out some 120 feet, and additional sidewall and roof were built to add about one acre to the building. The original LUPTON "Master" Projected Aluminum Windows were re-installed with no alteration whatsoever, and continue to provide a "ribbon" of controlled ventilation and light.

Apart from their flexibility—which was ideal for Leeds and Northrup's planned expansion—let's see why "Master" projected windows meet so many requirements on important projects.

ALL-WEATHER VENTILATION—Lupton "Master" windows are available with ventilators which project inwards (usually at the sill) or outwards, or both ways in the same unit. This means you can enjoy *all-weather ventilation*, free from drafts and rain damage.



Contractor: Baton Construction Corporation, Philadelphia, Pa. Photograph by Aero Service Corp., Philadelphia.

OF 1956: GEARED TO GROW!

for the future . . . specifies LUPTON "Master" windows.

MINIMUM MAINTENANCE COSTS—Lupton aluminum "Master" windows won't rust or corrode; never need painting; maintain their attractive appearance for the life of the building. They're sturdy and rugged—tight fitting and rattle-free. Most standard types can be cleaned from within the building.

NEW CREATIVE FREEDOM FOR YOU—By combining standard fixed and projected LUPTON window units, you can create smart "custom" effects that distinguish even your lowest budget projects.

For over fifty years, Lupton has pioneered products for better natural lighting and ventilation for the building industry. Such experience warrants your investigation. For complete details, consult SWEET's Architectural File (Sections 3 and 17). And for the name of your local LUPTON representative, look in the Yellow Pages under "Windows—Metal." Or, for detailed information, write directly to us.

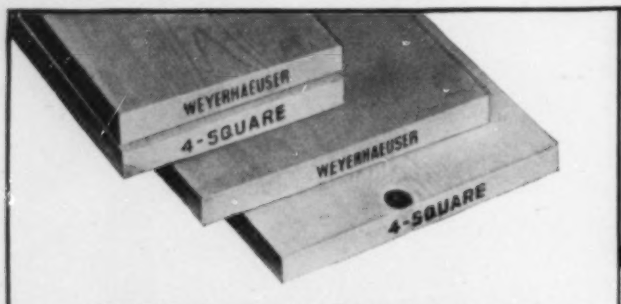
* "Slickest Job Shop of the Year" is what the Editors of Factory Management and Maintenance called the Leeds and Northrup building in choosing it as one of the "top ten" plants of 1956 from nominations by leading architects and builders. Of these 10 projects, *three* feature LUPTON curtain walls or LUPTON windows: Lambert-Hudnut at Lititz, Pa.; Owens-Corning Fiberglas at Barrington, N.J.; and the Leeds and Northrup plant shown above.

LUPTON

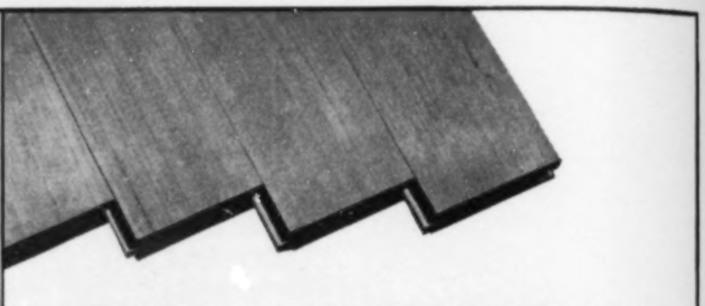
METAL WINDOWS · CURTAIN WALLS

MICHAEL FLYNN MANUFACTURING COMPANY

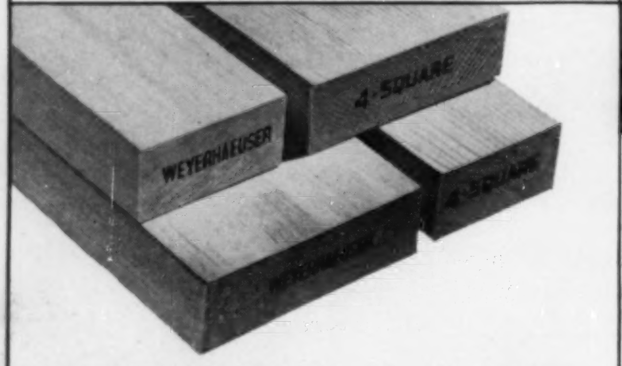
Main Office & Plant: 700 E. Godfrey Ave., Philadelphia 24, Pa.



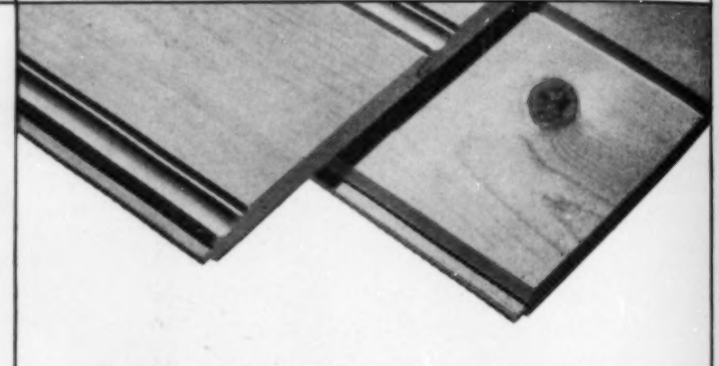
BOARDS: Seasoned before surfacing to size. Available in a wide range of species and grades.



FLOORING: Controlled kiln-drying means a firm, smooth surface for fine appearance and dependable service.



DIMENSION: Scientifically kiln-dried framing lumber contributes to sound, durable construction.



PANELING: Kiln-Dried Panelings come in a wide choice of species and patterns... also beautiful plywood panelings.

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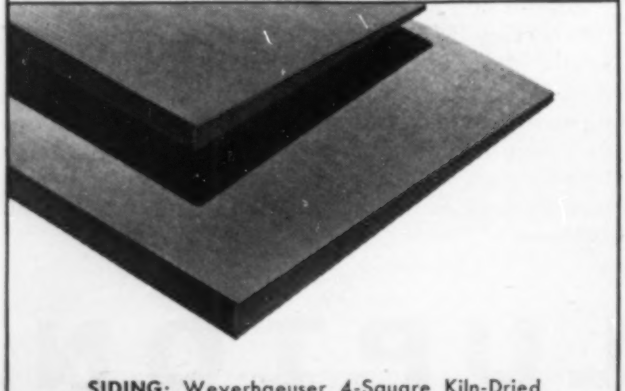
END-MATCHING eliminates waste and reduces building time. End-Matched items include wall and roof sheathing, sub-flooring, finish flooring, drop siding, and ceiling.



SIDING: Weyerhaeuser 4-Square Kiln-Dried Sidings are available in a broad selection of patterns, grades, and species.

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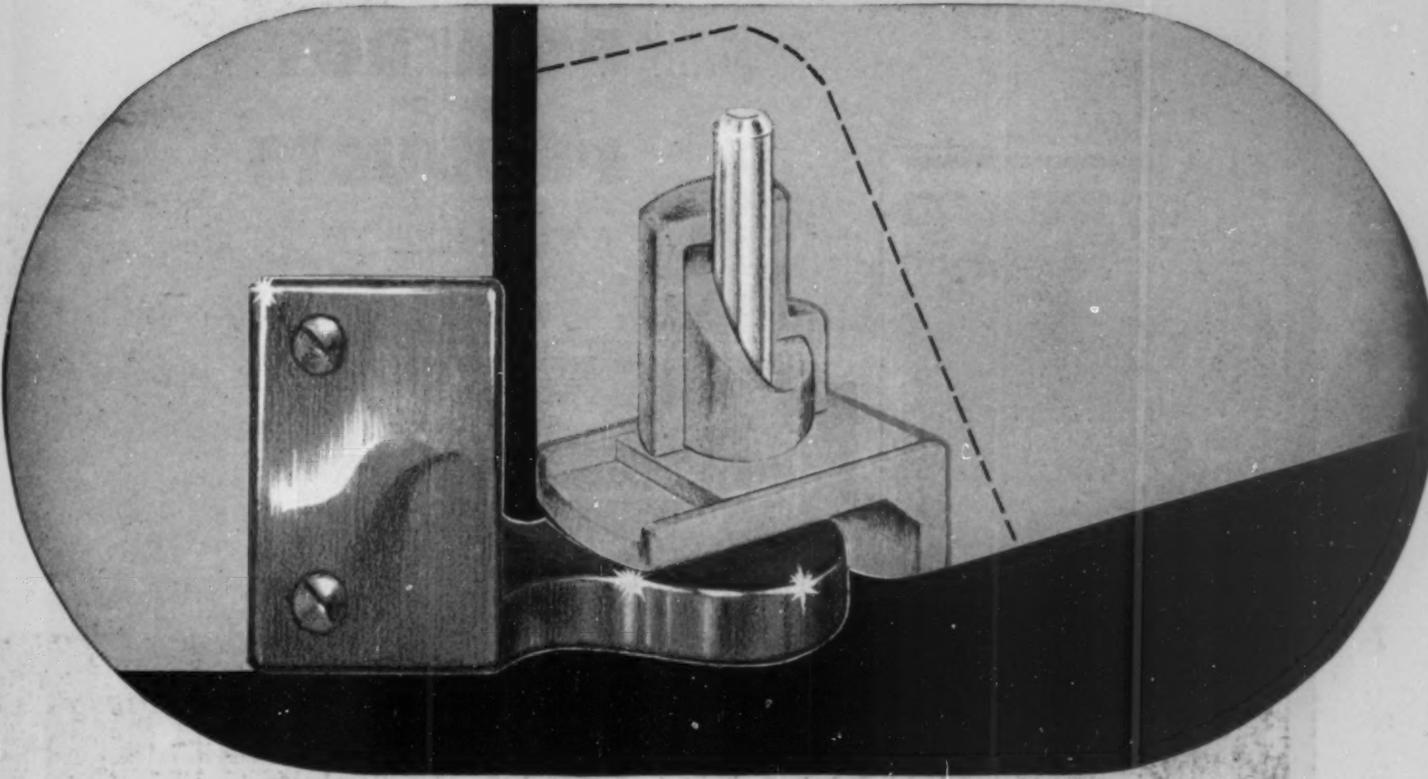

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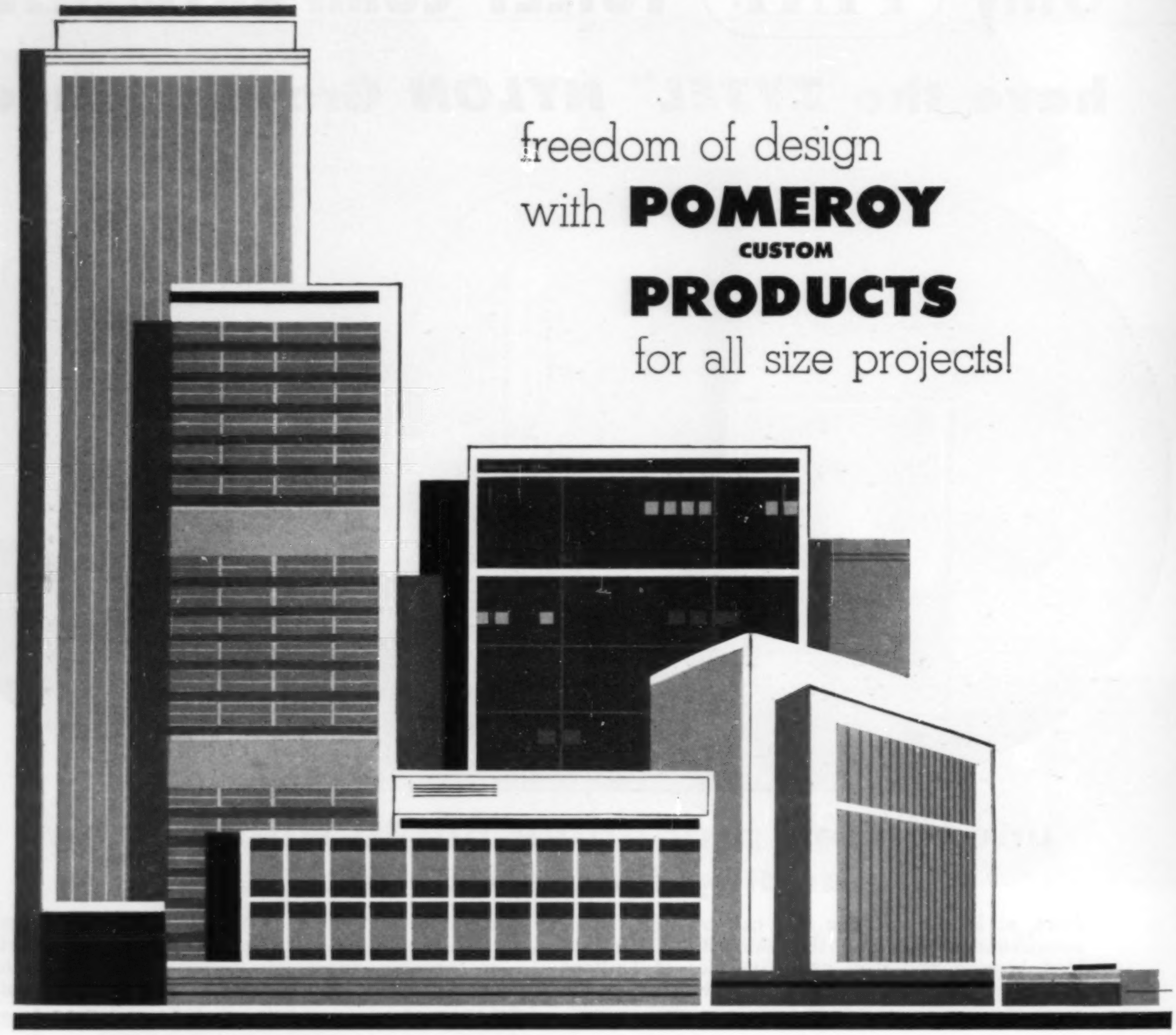

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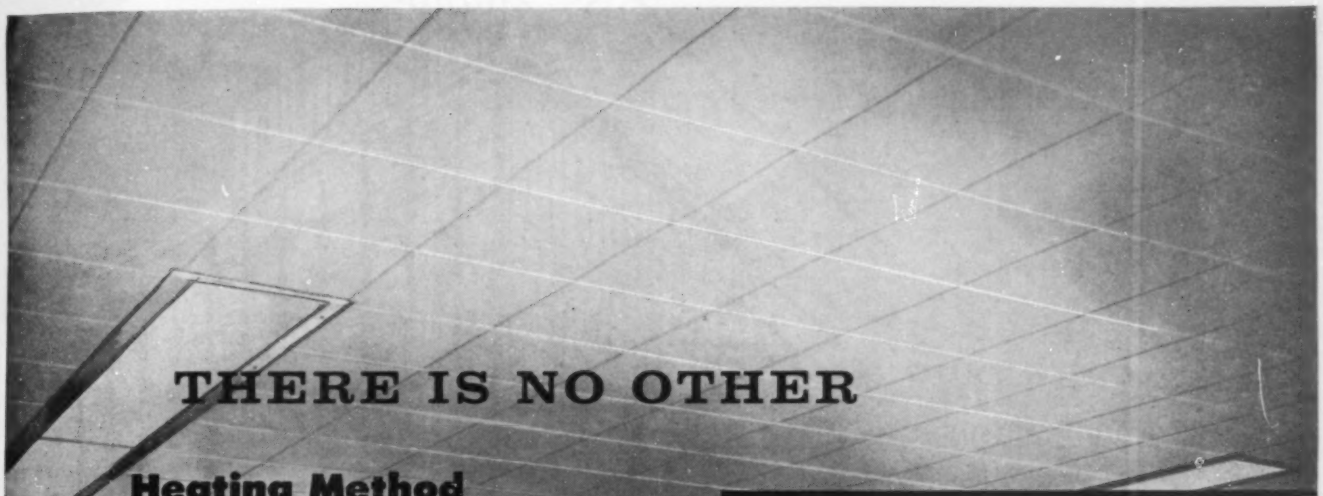

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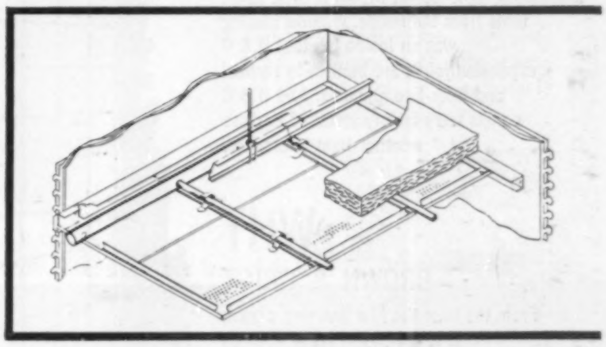

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IN SWEET'S ARCHITECTURAL FILE
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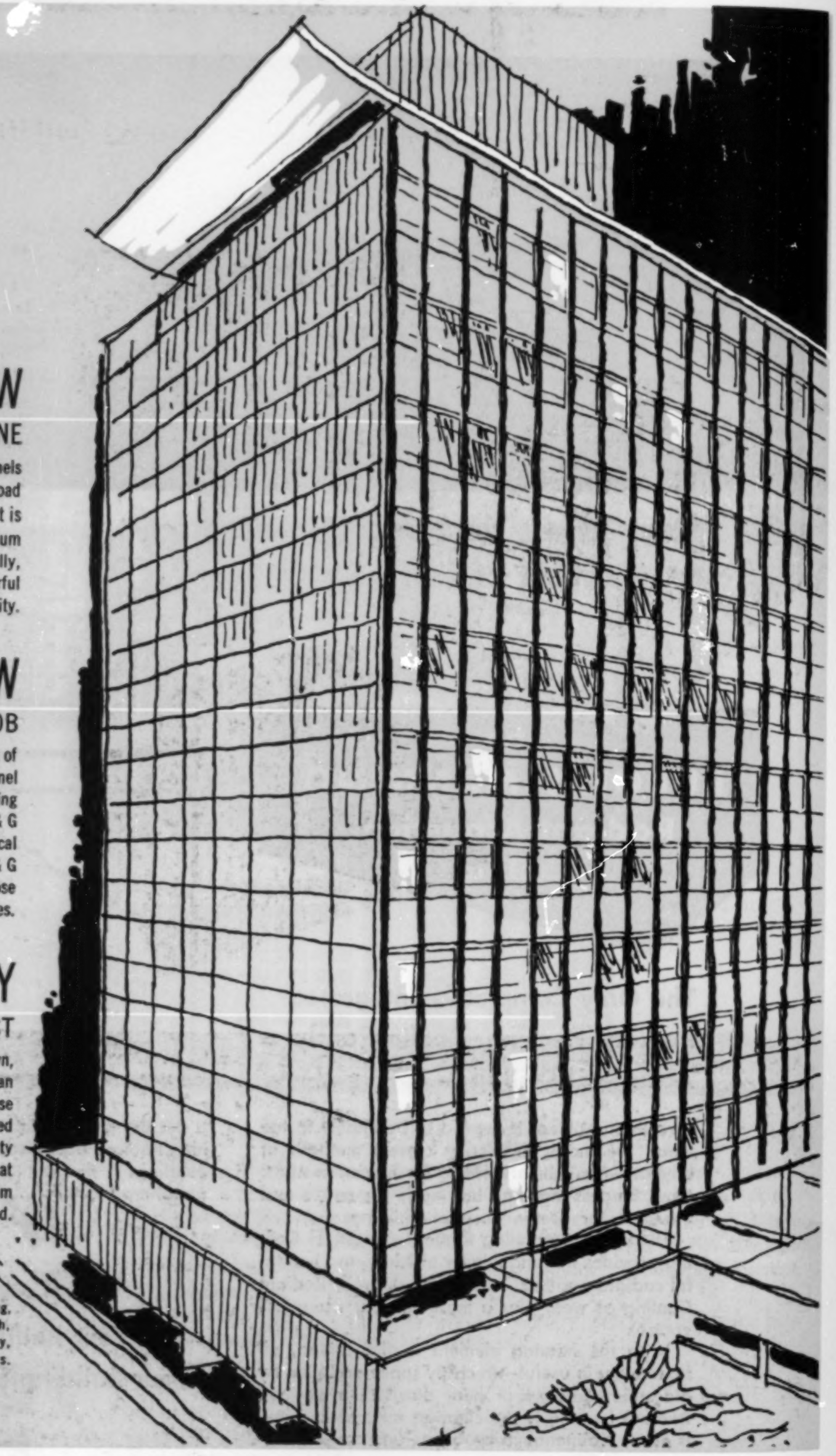

HOW

962 BECAME ONE

962 slim one-story Brown & Grist panels blanket the Pennsylvania Railroad Building in Pittsburgh. Yet the effect is harmonious oneness. Gleaming aluminum mullions lead the eye vertically, while B & G windows and colorful panels give a horizontal unity.

HOW

OUTSIDE WALLS=INSIDE JOB

Just a few men made quick work of assembling light-weight Brown & Grist panel units from the inside. Window glazing was an inside job too! B & G expansion joints are built-in to vertical and floor-line mullions. And B & G panels were factory installed to close weather-tight tolerances.

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From the time the first line was drawn, B & G Window Walls were an important part of the plans. That's because the architect was primarily interested in a quality wall at a quantity price, and knew from past experience that Brown & Grist could give him what he wanted.

Pennsylvania Railroad Office Building, Pittsburgh, Pa. Hedrick and Stanley, Fort Worth, Texas, Architects. Henry C. Beck Company, Atlanta, Ga., Contractors.

BROWN & GRIST WINDOW WALLS

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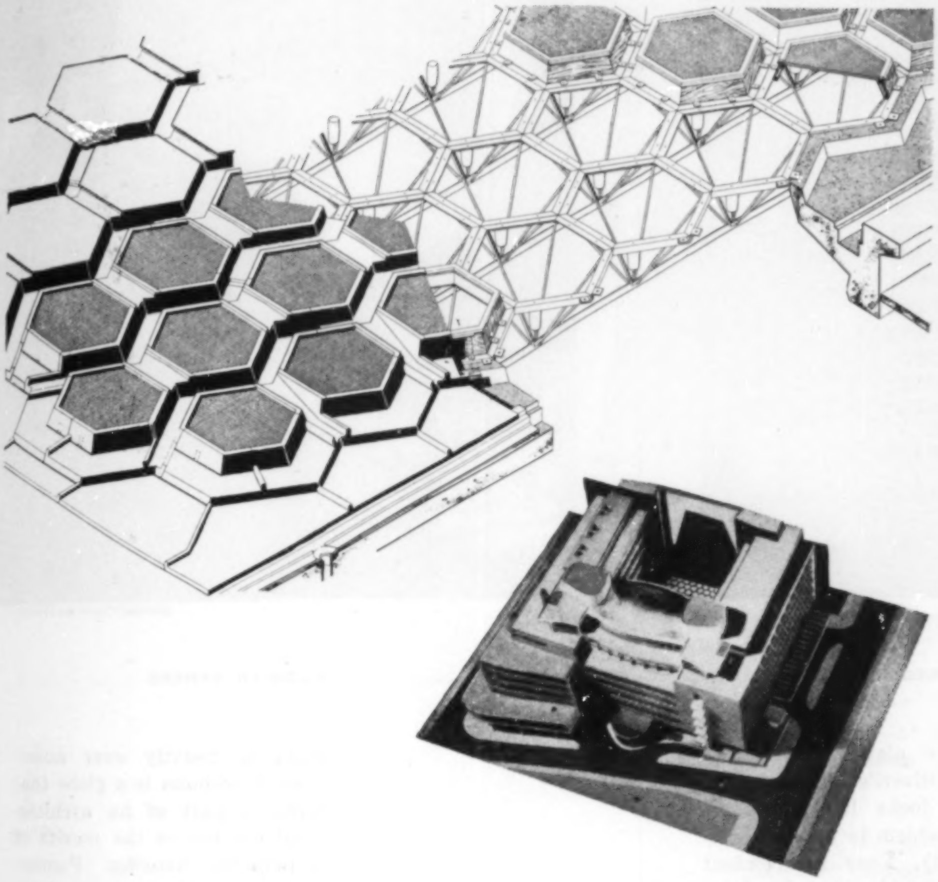
Abroad

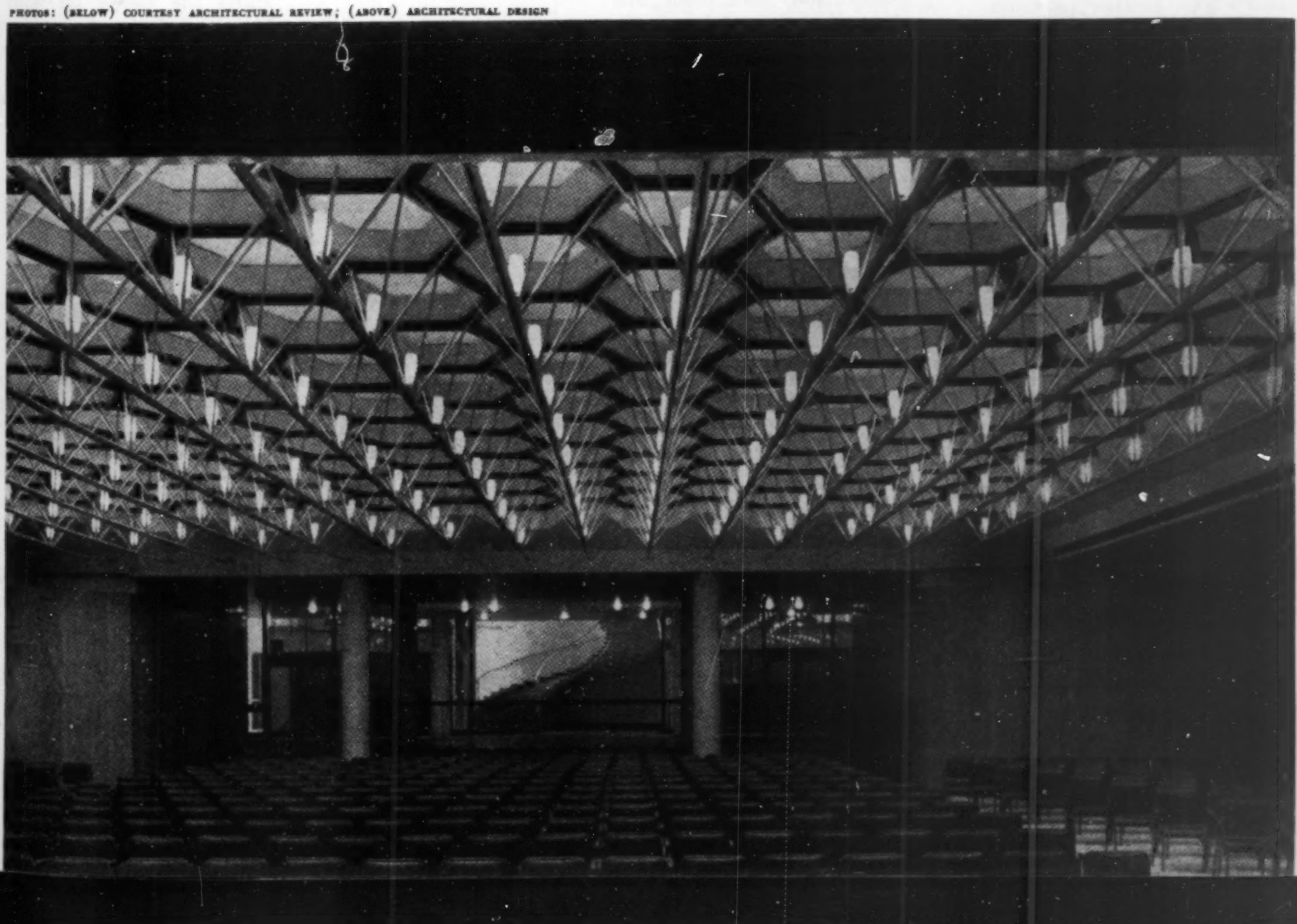
A continuing review of international building

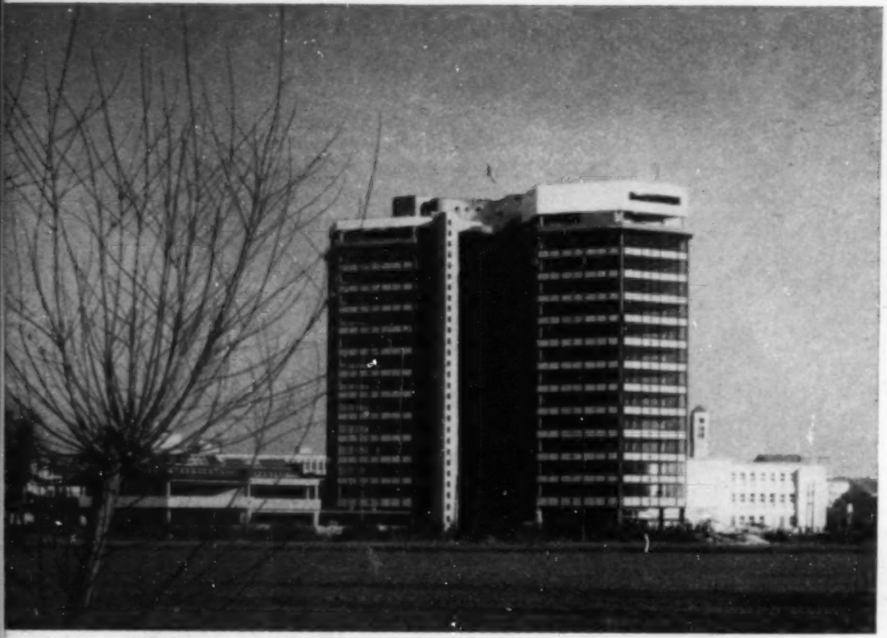


BRITISH BEEHIVE

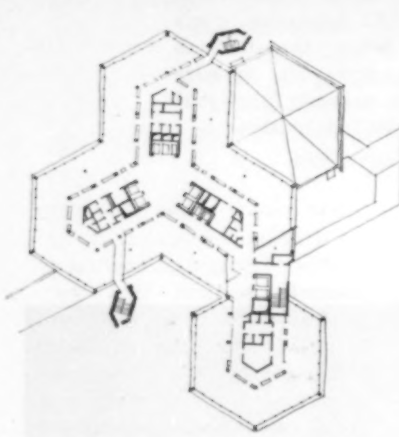
Tucked into a tight corner of London is the recently completed Trades Union Congress Memorial Building, the result of Great Britain's hottest postwar architectural competition. The award-winning design for the headquarters building is the work of David du R. Aberdeen (see model). Above the 50-car basement garage rises a six-story, U-shaped building, the open end of which abuts a neighboring wall. The wall is used as the backdrop for a dramatic memorial sculpture by Sir Jacob Epstein, which can be seen from all offices opening on the court and from the conference hall. The roof of the conference hall (detail, left) is a metal space frame set with 172 hexagonal glass sections. When the hall is lighted (below), it appears from above as busily functional as a well-staffed beehive.

PHOTOS: (BELOW) COURTESY ARCHITECTURAL REVIEW; (ABOVE) ARCHITECTURAL DESIGN



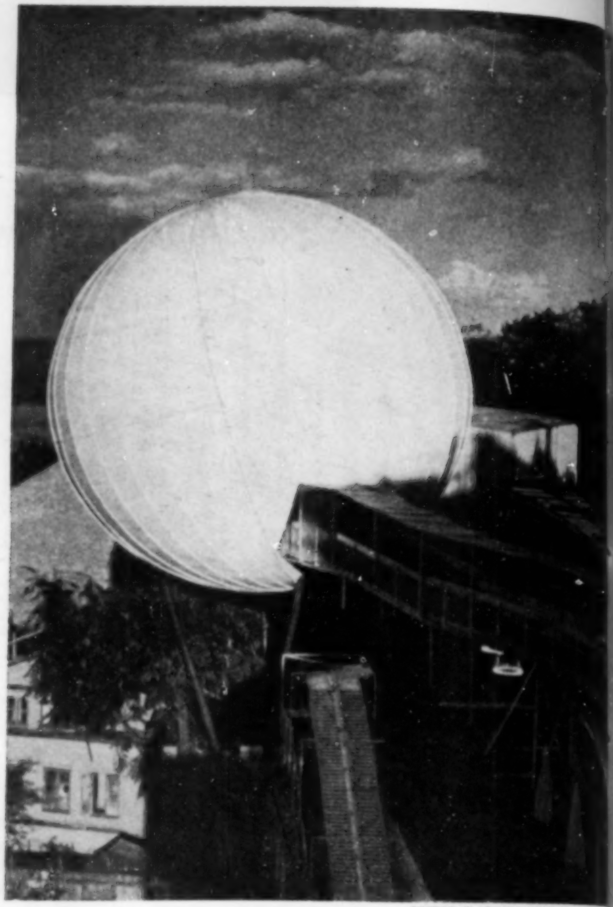


CASALI STUDIO



ITALIAN GEOMETRY

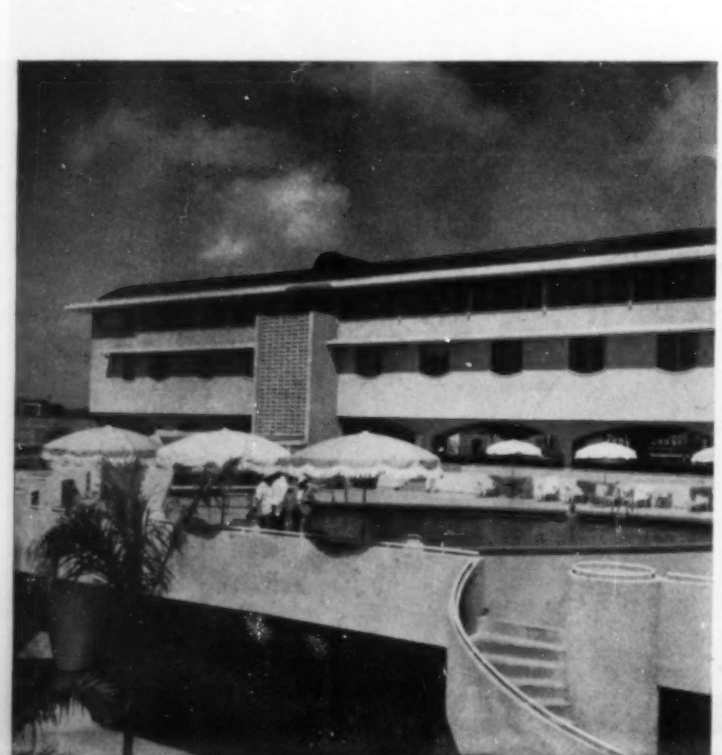
The floor plan of Architect Mario Oliveri's Milan office building looks like an unresolved problem in plane geometry (left). Four independent sections are forcibly fitted together. But when built into three dimensions (above), the 14-story tower achieves a handsome, glass-faced unity that is indeed greater than the sum of its hexagonal parts.

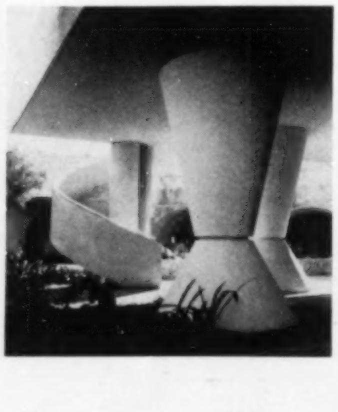


COURTESY BYGGMASTAREN

SWEDISH SPHERE

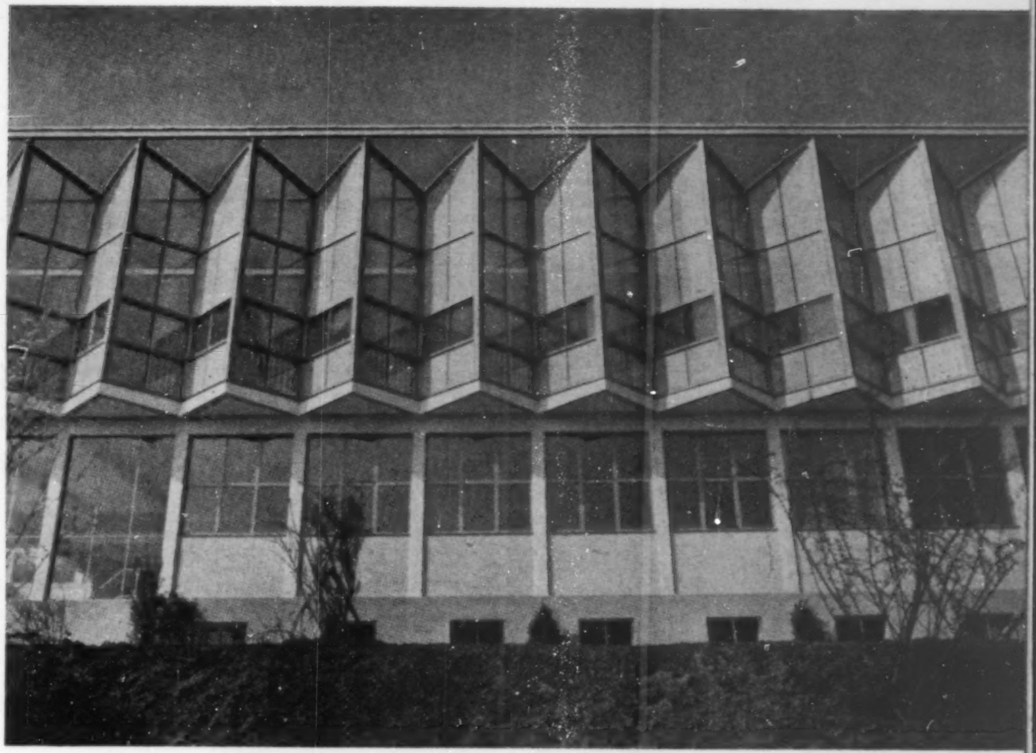
Hanging heavily over downtown Stockholm is a globe that forms a part of an architectural exhibit on the merits of cooperative housing. Ponderously symbolic, the exhibit starts the viewer off with a high-level look at world resources (the globe), drops him down a steep staircase to a basement display of local accomplishments.





WEST INDIAN SCULPTURE

This season, sun-seeking tourists discovered that the plastic forms of the Le Corbusier school of modern architecture had found their way to the Dutch West Indies. The new Curaçao Hotel, designed by New York Architect Joseph Salerno, was built on the site of an old waterfront fort which provided room for a large sunken garden. Chubby, sculptured columns rise from the garden to support the weight of an upper-level swimming pool and patio.

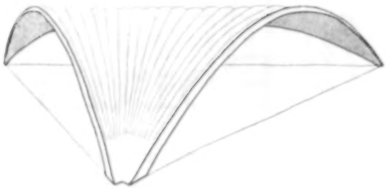


PHOTOS: COURTESY WERK

SWISS ZIGS

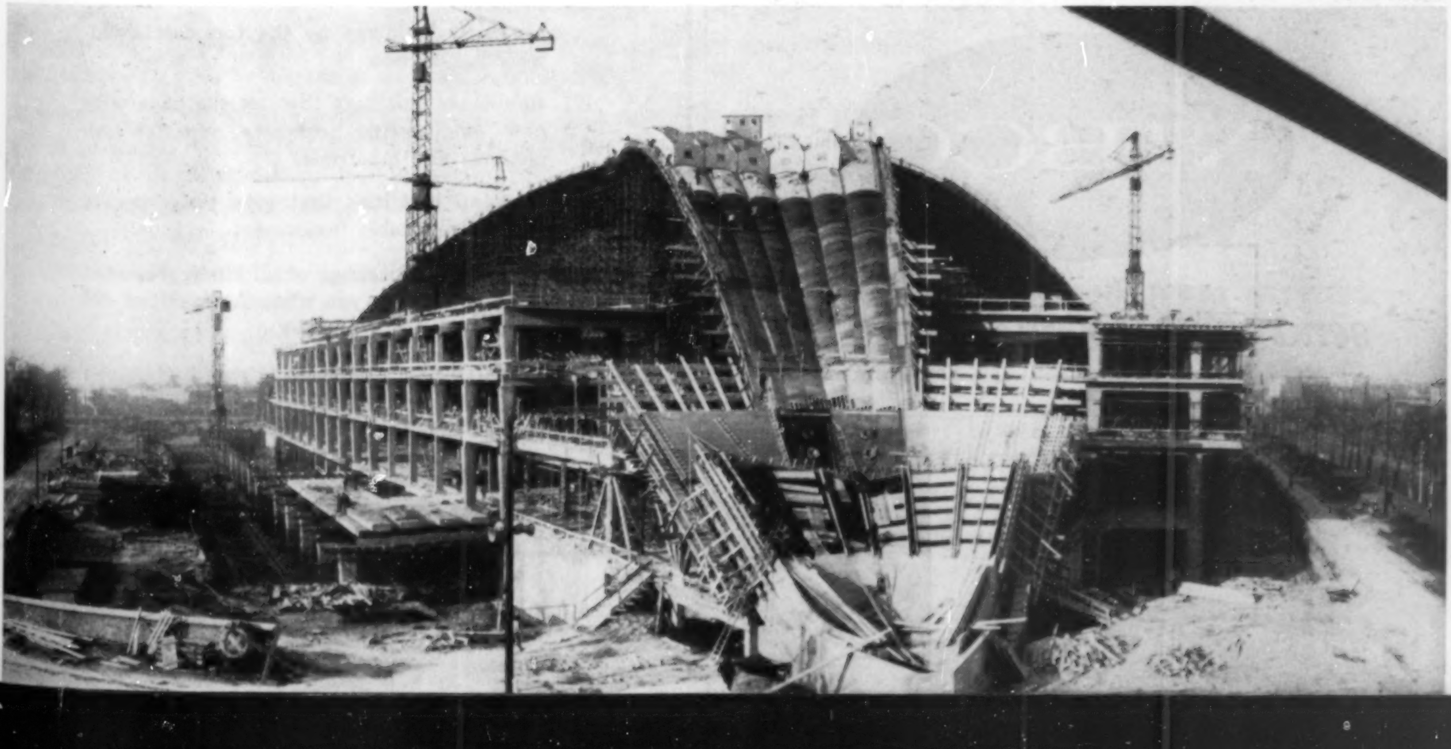
Architect Hans Fischli designed the zigzag façade of a new assembly shop in Horgen, Switzerland to deflect morning glare from the tinted glass of the east-facing zigs. Clear glass is set in the north-facing zags, admitting more than enough glarefree light.

FRENCH ARCHES



On the outskirts of Paris Architect-Engineer Bernard Zehrfuss has built an immense shell for the offices and exhibits of the National Center of Industries and Techniques. The shell consists of many soaring, intersecting arches, all of which spring from the three corners of the triangular plan (left). Along the sides of the structure, the arched spans measure 656 feet. The three main floors are built of myriad triangular, reinforced concrete sections that were prefabricated in a plant built especially for the mammoth undertaking. The floors are arranged so that trucks may drive into both the 750,000 square feet of exhibition area and the 400,000 square feet of perimeter shops. END

J. M. BUSIGNY



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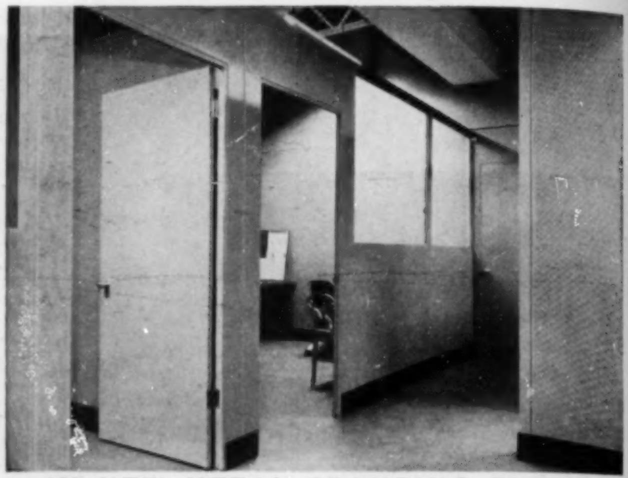

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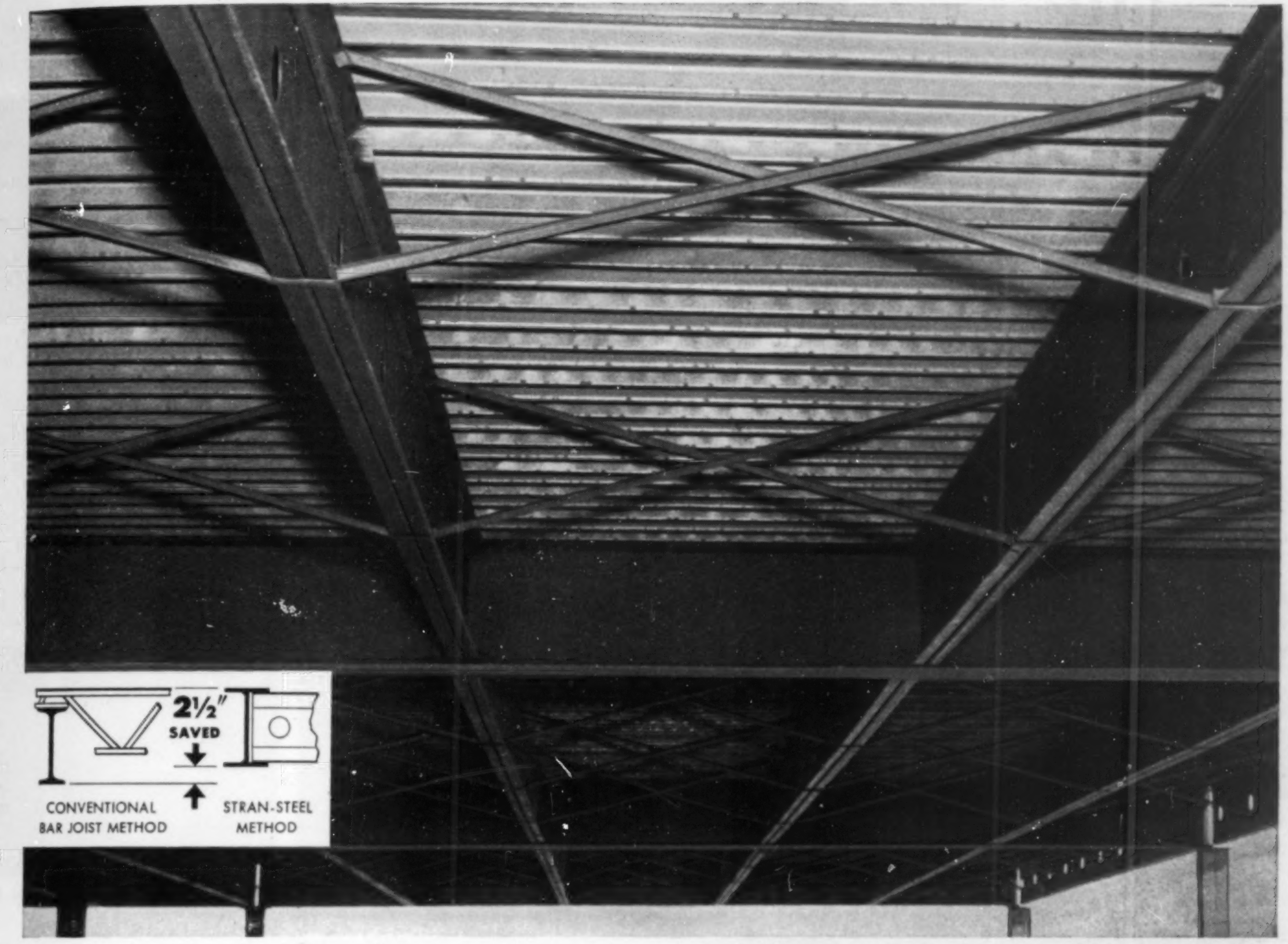
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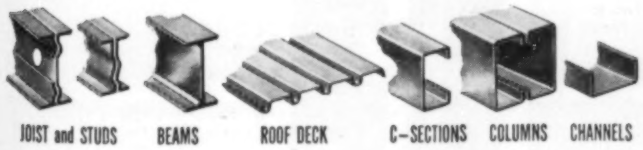
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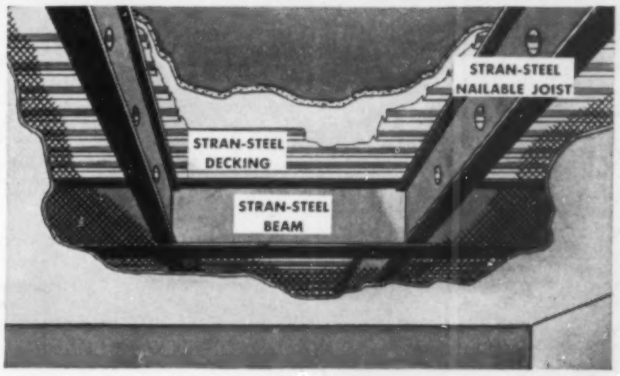
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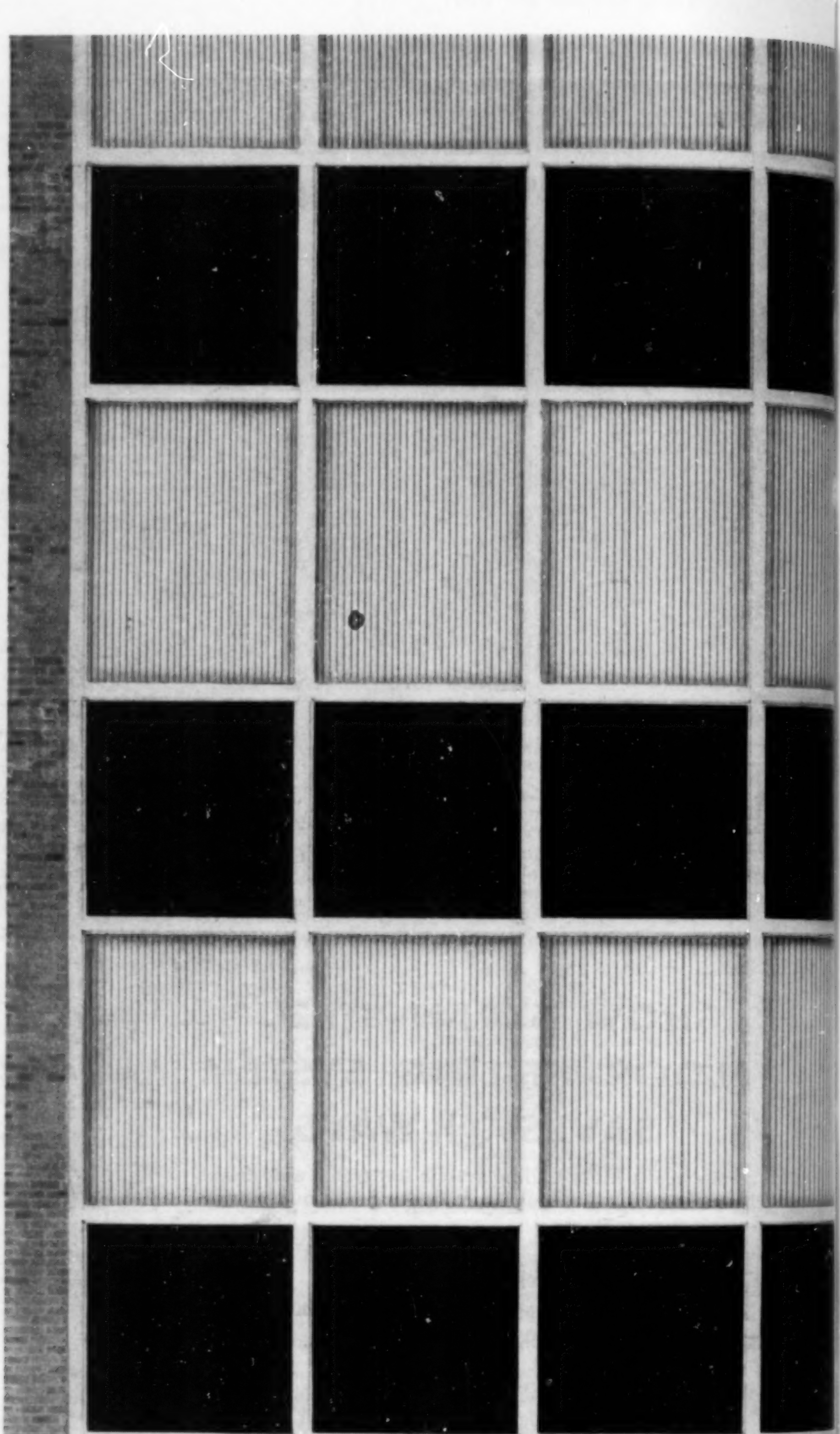

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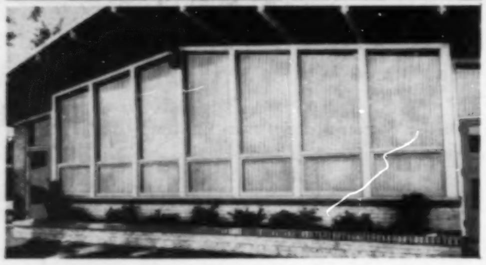

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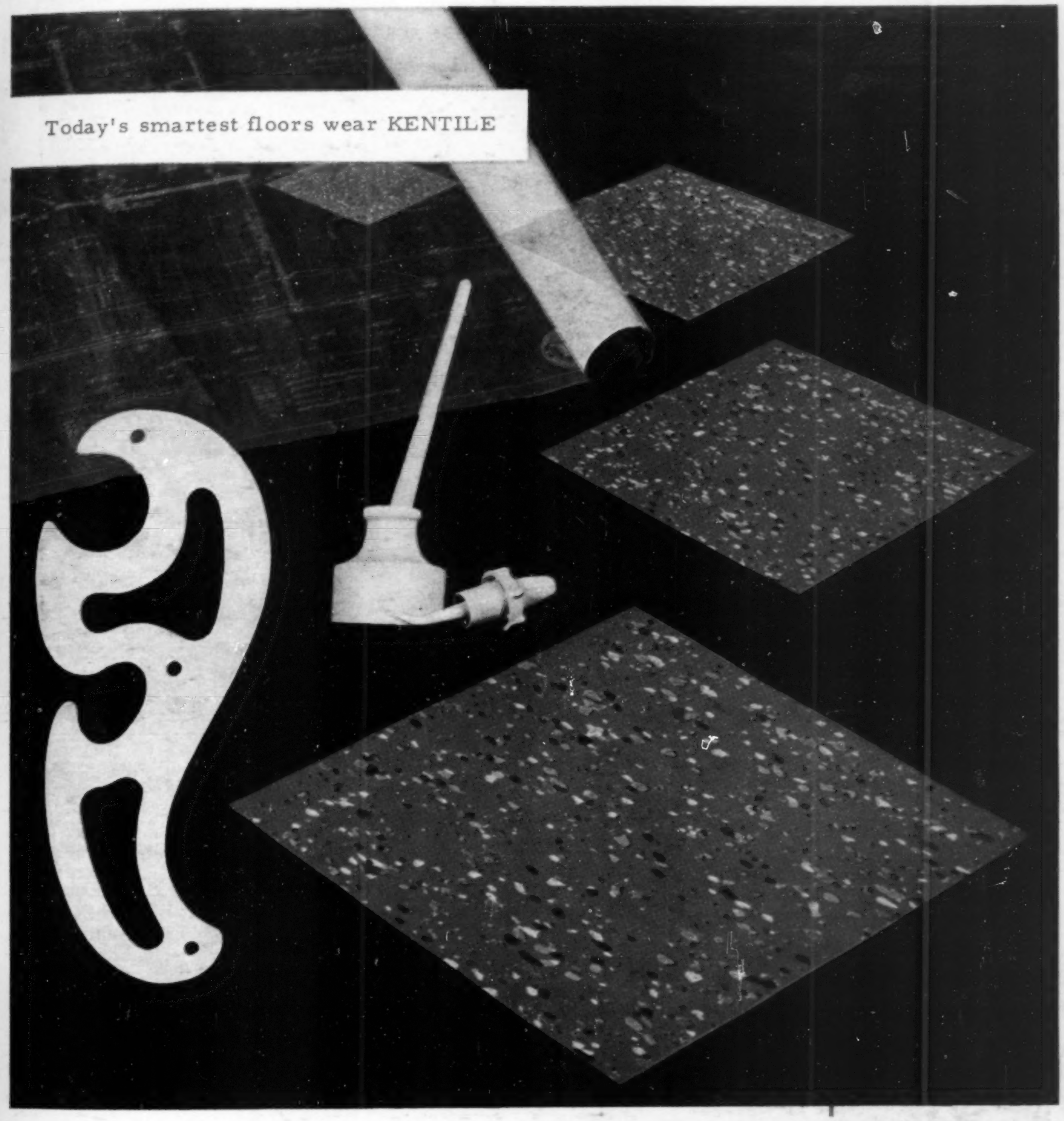

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